John Carter Brown
Library
Brown University



William Starkie.

No.

JOHN CARTER BROWN
LIBRARY

Purchased from the
Trust Fund of
Lathrop Colgate Harper
LITT. D.

THE

VOYAGES

AND

ADVENTURES

OF

Capt. WILLIAM DAMPIER.

WHEREIN ARE DESCRIBED

The Inhabitants, Manners, Cuſtoms, Trade, Harbours, Soil, Animals, Vegetables, &c. of the principal Countries, Iſlands, &c. of Aſia, Africa, and America; Illuſtrated with Maps, &c.

TO WHICH IS ADDED,

A Diſcourſe on Winds, Seaſons, Tides and Currents of the Torrid Zone throughout the World.

VOL. III.

LIVERPOOL:

Printed by W. NEVETT and Co. in *Prince's-ſtreet*; and ſold by Meſſrs. GORE, ANSDELL, and SIBBALD, Bookſellers.

M,DCC,LXIX.

Mr. DAMPIER's Voyages.

VOL. III.

CHAP. XXXVII.

The author ſails from the Downs on a voyage to Terra Auſtralis, with an account of the Canary and Cape Verd Iſles.

I Sailed from the Downs early on Saturday, Jan. 14, 1698-9, with a fair wind, in his Majeſty's ſhip the Roebuck, carrying but twelve guns in this voyage, and fifty men and boys, with twenty months proviſion. We had ſeveral of the king's ſhips in company, bound for Spithead and Plymouth; and by noon we were off Dungeneſs. We parted from them that night, and ſtood down the channel, but found ourſelves next morning nearer the French coaſt than we expected; Cape la Hague bearing S. E. and by E. ſix leagues. There were many other ſhips, ſome nearer, ſome farther off the French coaſt, who all ſeemed to have gone nearer to it than they thought they ſhould. My maſter, who was ſomewhat troubled at it at firſt, was not diſpleaſed however to find that he had company in his miſtake; which as I have heard, is a very common one, and fatal to many ſhips. The occaſion of it is the not allowing for the change of the variation ſince the making of the charts, which captain Halley has obſerved to be very conſiderable. I ſhall refer the reader to his own account of it which he cauſed to be publiſhed in a ſingle ſheet of paper, purpoſely for a caution to ſuch as paſs up and down the Engliſh channel; and my own ex-

perience thus confirming to me the uſefulneſs of ſuch a caution, I was willing to take this occaſion of helping towards the making it the more public.

Not to trouble the reader with every days run, nor with the winds or weather (but only in the remoter parts, where it may be more particularly uſeful) ſtanding away from Cape la Hague, we made the Start about five that afternoon; which being the laſt land we ſaw of England, we reckoned our departure from thence; tho' we had rather have taken it from the Lizard, if the hazy weather would have ſuffered us to have ſeen it.

The firſt land we ſaw after we were out ot the channel, was Cape Finiſterre, which we made on the 19th; and on the 28th made Lancerota, one of the Canary Iſlands.

We were now ſtanding away for the iſland Teneriffe, where I intended to take in ſome wine and brandy for my voyage. On Sunday, half an hour paſt three in the afternoon, we made the iſland, and crouded in with all our ſails till five; when the N. E. point of the iſle bore W. S. W. diſt. ſeven leagues; but being then ſo far off that I could not expect to get in before night, I lay by till next morning, deliberating whether I ſhould put in at Santa Cruz, or at Oratavia, the one on the eaſt the other on the weſt ſide of the iſland, which lies moſtly north and ſouth, and theſe are the principal ports on each ſide. I choſe Santa Cruz as the better harbour (eſpecially at this time of the year) and as beſt furniſhed with that ſort of wine which I had occaſion to take in for my voyage: ſo there I come to an anchor Jan. 30, in thirty three fathom water, black ſlimy ground, about half a mile from the ſhore, from which diſtance I took the ſight of the town.

In

In this road ſhips muſt ride in thirty, forty, or fifty fathom water, not above half a mile from the ſhore at fartheſt; and if there are many ſhips, they muſt ride cloſe one by another. The ſhore is generally high land, and in moſt places ſteep to. This road lies ſo open to the eaſt, that winds from that ſide make a great ſwell, and very bad going aſhore in boats: the ſhips that ride here are then often forced to put to ſea, and ſometimes to cut or ſlip their anchors, not being able to weigh them. The beſt and ſmootheſt landing is in a ſmall ſandy cove, about a mile to the north eaſt of the road, where there is good water, with which ſhips that lade here are ſupply'd; and many times ſhips that lade at Oratavia, which is the chief port for trade, ſend their boats hither for water. That is a worſe port for weſterly than this is for eaſterly winds; and then all ſhips that are there put to ſea. Between this watering-place and Santa Cruz are two little forts, which with ſome batteries ſcattered along the coaſt command the road. Santa Cruz itſelf is a ſmall unwalled town fronting the ſea, guarded with two other forts to ſecure the road. There are about two hundred houſes in the town, all two ſtories high, ſtrongly built with ſtone, and covered with pantile. It hath two convents and one church, which are the beſt buildings in the town. The forts here could not ſecure the Spaniſh galleons from admiral Blake, tho' they hall'd in cloſe under the main fort. Many of the inhabitants that are now living remember that action; in which the Engliſh batter'd the town and did it much damage; and the marks of the ſhot ſtill remain in the fort walls. The wrecks of the galleons that were burnt here lie in fifteen fathom water; and 'tis ſaid that moſt of the plate lies there, tho' ſome of it was haſtily carried aſhore at Blake's coming in ſight.

Soon

Soon after I had anchored I went aſhore here to the govornor of the town, who received me very kindly and invited me to dine with him the next day. I returned on board in the evening, and went aſhore again with two of my officers the next morning, hoping to get up the hill time enough to ſee Laguna, the principal town, and to be back again to dine with the governor of Santa Cruz; for I was told that Laguna was but three miles off. The road is all the way up a pretty ſteep hill; yet not ſo ſteep but that carts go up and down laden. There are public houſes ſcattering by the way ſide, where we got ſome wine. The land on each ſide ſeemed to be but rocky and dry, yet in many places we ſaw ſports of green flouriſhing corn. At farther diſtances there were ſmall vineyards by the ſides of the mountains, intermix'd with abundance of waſte rocky land, unfit for cultivation, which afforded only dildo-buſhes. It was about ſeven or eight in the morning when we ſet out from Santa Cruz; and it being fair clear weather, the ſun ſhone very bright and warmed us ſufficiently before we got to the city Laguna; which we reached about ten o'clock, all ſweaty and tired, and were glad to refreſh ourſelves with a little wine in a ſorry tippling houſe; but we ſoon found out one of the Engliſh merchants that reſided here, who entertain'd us handſomely at dinner, and in the afternoon ſhew'd us the town.

Laguna is a pretty large well compacted town, and makes a very agreeable proſpect. It ſtands part of it againſt a hill, and part in a level. The houſes have moſtly ſtrong walls built with ſtone and covered with pantile. They are not uniform, yet they appear pleaſant enough. There are many fair buildings; among which are two pariſh churches, two nunneries, an hoſpital, four convents, and

ſome

ſome chapels; beſides many gentlemen's houſes. The convents are thoſe of St. Auſtin, St. Dominic, St. Francis, and St. Diego. The two churches have pretty high ſquare ſteeples, which top the reſt of the buildings. The ſtreets are not regular, yet they are moſtly ſpacious and pretty handſome; and near the middle of the town is a large parade, which has good buildings about it. There is a ſtrong priſon on one ſide of it, near which is a large conduit of good water, that ſupplies all the town. They have many gardens which are ſet round with oranges, limes, and other fruits; in the middle of which are pot-herbs, ſallading, flowers, &c. and indeed, if the inhabitants were curious this way, they might have very pleaſant gardens; for as the town ſtands high from the ſea, on the brow of a plain that is all open to the eaſt, and hath conſequently the benefit of the true trade wind, which blows here, and is moſt commonly fair; ſo there are ſeldom wanting, at this town, briſk, cooling, and refreſhing breezes all the day.

On the back of the town there is a large plain of three or four leagues in length and two miles wide, which produces a thick kindly ſort of graſs, that look'd green and very pleaſant when I was there, like our meadows in England in the ſpring. On the eaſt ſide of this plain, very near the back of the town, there is a natural lake or pond of freſh water. It is about half a mile in circumference; but being ſtagnant, 'tis only uſed for cattle to drink of. In the winter time ſeveral ſorts of wild fowl reſort thither, affording plenty of game to the inhabitants of Laguna. This city is called Laguna from hence; for that word in Spaniſh ſignifies a lake or pond. The plain is bounded on the W. the N. W. and the S. W. with high ſteep hills; as high above this plain as this is above the ſea; and 'tis from

from the foot of one of theſe mountains that the water of the conduit which ſupplies the town, is conveyed over the plain, in troughs of ſtone raiſed upon pillars. And, conſidering the ſituation of the town, its large proſpect to the eaſt (for from thence you ſee the Grand Canary) its gardens, cool arbors, pleaſant plain, green fields, the pond and aqueduct, and its refreſhing breezes, it is a very pleaſant place, eſpecially for ſuch as have not buſineſs that calls them far and often from home; for the iſland being generally mountainous, ſteep and craggy, full of riſings and fallings, 'tis very troubleſome travelling up and down it, unleſs in the cool of the mornings and evenings: and mules and aſſes are moſt uſed by them, both for riding and carriage, as fitteſt for the ſtony, uneven roads.

Beyond the mountains, on the S. W. ſide, ſtill further up, you may ſee from the town and plain a ſmall pecked hill, overlooking the reſt. This is that which is called the Pike of Teneriffe, ſo much noted for its height: but we ſaw it here at ſo great a diſadvantage, by reaſon of the nearneſs of the adjacent mountains to us, that it looked inconſiderable in reſpect to its fame.

The true Malmeſy wine grows in this iſland; and this here is ſaid to be the beſt of its kind in the world. Here is alſo Canary wine, and Verdona, or green wine. The Canary grows chiefly on the weſt ſide of the iſland; and therefore is commonly ſent to Oratavia, which being the chief ſea port for trade in the iſland, the principal Engliſh merchants reſide there, with their conſul; becauſe we have a great trade for this wine. I am told, that town is larger than Laguna; that it has but one church, but many convents: that the port is but ordinary at beſt, and is very bad when the N. W. winds blow. Theſe northweſters give notice of their coming, by a great

ſea

ſea that tumbles in on the ſhore for ſome time before they come, and by a black ſky in the N. W. Upon theſe ſigns, ſhips either get up their anchors, or ſlip their cables and put to ſea, and ply off and on till the weather is over. Sometimes they are forced to do ſo two or three times before they can take in their lading, which it is hard to do here in the faireſt weather; and for freſh water, they ſend, as I have ſaid, to Santa Cruz. Verdona is green, ſtrong bodied wine, harſher and ſharper that Canary. 'Tis not ſo much eſteemed in Europe, but is exported to the Weſt Indies, and will keep beſt in hot countries; for which reaſon I touch'd here to take in ſome of it for my voyage. This ſort of wine is made chiefly on the eaſt ſide of the iſland, and ſhip'd off at Santa Cruz.

Beſides theſe wines, which are yearly vended in great plenty from the Canary iſlands (chiefly from the Grand Canary, Teneriffe, and Palma) here is ſtore of grain, as wheat, barley and maize, which they often tranſport to other places. They have alſo ſome beans and peas, and coches, a ſort of grain much like maize, ſowed moſtly to fatten land. They have papahs, which I ſhall ſpeak more of hereafter; apples, pears, plumbs, cherries, and excellent peaches, apricots, guavas, pomegranates, citrons, oranges, lemons, limes, pumpions, onions the beſt in the world, cabbages, turnips, potatoes, &c. They are alſo well ſtocked with horſes, cows, aſſes, mules, ſheep, goats, and hogs, conies, and plenty of deer. The Lancerot horſes are ſaid to be the moſt mettleſome, fleet, and loyal horſes that are. Laſtly, here are many fowls, as cocks and hens, ducks, pidgeons, partridges, &c. with plenty of fiſh, as mackrel, &c. All the Canary iſlands have of theſe commodities and proviſions more or leſs: but as Lancerota is moſt fam'd for horſes,

and

and Grand Canary, Teneriffe and Palma for wines, Teneriffe eſpecially for the beſt Malmeſy (for which reaſon theſe three iſlands have the chief trade) ſo is Forteventura for dunghill fowls, and Gomera for deer. Fowls and other eatables are dear on the trading iſlands; but very plentiful and cheap on the other; and therefore 'tis beſt for ſuch ſhips as are going out on long voyages, and who deſign to take in but little wine, to touch rather at theſe laſt; where alſo they may be ſupplied with wine enough, good and cheap: and for my own part, if I had known it before I came hither, I ſhould have gone rather to one of thoſe iſlands than to Teneriffe: but enough of this.

'Tis reported they can raiſe twelve thouſand armed men on this iſland. The governor or general (as he is call'd) of all the Canary Iſlands lives at Laguna: his name is Don Pedro de Ponto: he is a native of this iſland, and was not long ſince preſident of Panama in the South Seas; who bringing ſome very rich pearls from thence, which he preſented to the queen of Spain, was therefore, as 'tis ſaid, made general of the Canary iſlands. The Grand Canary is an iſland much ſuperior to Teneriffe both in bulk and value; but this gentleman chuſes rather to reſide in this his native place. He has the character of a very worthy perſon, and governs with moderation and juſtice, being very well beloved.

One of his deputies was the governor of Santa Cruz, with whom I was to have dined, but ſtaying ſo long at Laguna, I came but time enough to ſup with him. He is a civil, diſcreet man, and reſides in the main fort cloſe by the ſea. There is a centinel ſtands at his door; and he has a few ſervants to attend him. I was treated in a large dark lower room, which has but one ſmall window. There were

were about two hundred muſkets hung up againſt the walls, and ſome pikes; no wainſcot, hangings, nor much furniture. There was only an old table, a few old chairs, and two or three pretty long forms to ſit on. Having ſupped with him, I invited him on board, and went off in my boat. The next morning he came on board with another gentleman in his company, attended by two ſervants; but he was preſently ſea ſick, and ſo much out of order that he could ſcarce eat or drink any thing, but went quickly aſhore again.

Having refreſhed my men aſhore, and taken in what we had occaſion for, I ſailed away from Santa Cruz, Feb. 4, in the afternoon, haſtening out all I could, becauſe the N. E. winds growing ſtormy, made ſo great a ſea that the ſhip was ſcarce ſafe in the road, and I was glad to get out, tho' we left behind ſeveral goods we had bought and paid for; for a boat could not go aſhore; and the ſtreſs was ſo great in weighing anchor, that the cable broke. I deſigned next for the iſle of Mayo, one of the Cape Verd iſlands; and ran away with a ſtrong N. E. wind, right afore it, all that night and the next day, at the rate of ten or eleven miles an hour; when it ſlackened to a more moderate gale. The Canary iſlands are, for their latitude, within the uſual verge of the true or general trade-wind, which I have obſerved to be, on this ſide the equator, N. Eaſterly: but then lying not far from the African ſhore, they are moſt ſubject to a north wind, which is the coaſting and conſtant trade, ſweeping that coaſt down as low as to Cape Verd; which ſpreading in breadth, takes in moſtly the Canary Iſlands; tho' it be there frequently interrupted with the true trade-wind, north weſt winds, or other ſhifts of wind that iſlands are ſubject to; eſpecially where they lie many together. The Pike of Teneriffe,

which had generally been clouded while we lay at Santa Cruz, appeared now all white with ſnow, hovering over the hills; but their height made it ſeem the leſs conſiderable; for it looks moſt remarkable to ſhips that are to the weſtward of it. We had briſk N. N. E. and N. E. winds from Teneriffe; and ſaw flying-fiſh, and a great deal of ſea-thiſtle weed floating. By the 9th of Feb. at noon we were in the lat. of 15 d. 4 m. ſo we ſteered away W. N. W. for the iſle of Mayo, being by judgment not far to the eaſt of it, and at ſeven o'clock in the evening lay by till day. The wind was then at weſt by ſouth, and ſo it continued all night, fair weather, and a ſmall eaſy gale. All theſe were ſigns, that we were near ſome land, after having had ſuch conſtant briſk winds before. In the morning after ſun-riſe, we ſaw the iſland at about four leagues diſtance; but it was ſo hazy over it, that we could ſee but a ſmall part of it; yet even by that part I knew it to be the iſle of Mayo.

I got not in till the next day, February 11, when I come to an anchor in the road, which is the leeward part of the iſland, for it is a general rule never to anchor to wind-ward of an iſland between the tropics. We anchored at eleven o'clock in fourteen fathom clean ſand, and very ſmooth water, about three quarters of a mile from the ſhore, in the ſame place where I anchored in my voyage round the world, and found riding here the Newport of London, a merchantman, captain Barefoot commander, who welcomed me with three guns, and I returned one for thanks. He came from Fayal, one of the weſtern iſlands, and had ſtore of wine and brandy on board. He was taking in ſalt to carry to Newfoundland, and was very glad to ſee one of the king's ſhips, being before our coming afraid of

pirates

pirates; which, of late years, had much infeſted this and the reſt of the Cape Verd iſlands.

I have given ſome account of the iſland of Mayo, and of other of theſe iſlands, in my voyage round the world, [Vol. I. Chap. 11.] but I ſhall now add ſome further obſervations that occurred to me in this voyage. The iſle of Mayo is about ſeven leagues in circumference, of a roundiſh form, with many ſmall rocky points ſhooting out into the ſea a mile, or more. Its latitude is fifteen degrees north, and as you ſail about the iſle, when you come pretty nigh the ſhore, you will ſee the water breaking off from thoſe points; which you muſt give a birth to, and avoid them. I ſailed at this time two parts in three round the iſland, but ſaw nothing dangerous beſides theſe points, and they all ſhewed themſelves by the breaking of the water; yet it is reported, that on the north, and N. N. W. ſide there are dangerous ſhoals, that lie farther off at ſea, but I was not on that ſide. There are two hills on this iſland of a conſiderable height; one pretty bluff, the other peeked at the top. The reſt of the iſland is pretty level, and of a good height from the ſea. The ſhore clear round hath ſandy bays, between the rocky points I ſpeak of; and the whole iſland is a very dry ſort of ſoil.

On the weſt ſide of the iſle where the road for ſhips is, there is a large ſandy bay, and a ſand bank, of about forty paces wide within it, which runs along the ſhore two or three miles; within which there is a large ſalina or ſalt-pond, contained between the ſand bank and the hills beyond it. The whole ſalina is about two miles in length, and half a mile wide; but above one half of it is commonly dry. The north end only of the pond never wants water, producing ſalt from November till May, which is here the dry ſeaſon of the year. The wa-

ter which yields this ſalt works in from out of the ſea thro' a hole in the ſand-bank before mentioned, like a ſluce, and that only in ſpring-tides, when it fills the pond more or leſs, according to the height of the tides. If there is any ſalt in the ponds when the fluſh of water comes in, it preſently diſſolves; but then in two or three days after it begins to kern, and ſo continues kerning till either all, or the greateſt part of the ſalt-water is congeal'd or kern'd, or till a freſh ſupply of it comes in again from the ſea. This water is known to come in only at that one paſſage on the north part of the pond; where alſo it is deepeſt. It was at a ſpring of the new moon when I was there, and I was told that it comes in at no other time but at the new moon ſpring-tides; but why that ſhould be I cannot gueſs. They who come hither to load ſalt rake it up as it kerns, and lay it in heaps on the dry land, before the water breaks in anew; and it is obſervable of this ſalt pond, that the ſalt kerns only in the dry ſeaſon, contrary to the ſalt-ponds in the Weſt Indies, particularly thoſe of the iſland Salt-Tortuga, which I have formerly mentioned (Vol. I. p. 190.) for they never kern there till the rains come in about April; and continue to do ſo in May, June, July, &c. while the wet ſeaſon laſts; and not without ſome good ſhower of rain firſt; but the reaſon alſo of this difference between the ſalt-ponds of Mayo, and thoſe of the Weſt Indies, why theſe ſhould kern in the wet ſeaſon, and the former in the dry ſeaſon, I ſhall leave to philoſophers.

Our nation drives here a great trade for ſalt, and have commonly a man of war here for the guard of our ſhips and barks that come to take it in; of which I have been informed that in ſome years there have not been leſs that one hundred in a year. It coſts nothing but men's labour to rake it together,

ther, and wheel it out of the pond, except the carriage; and that alſo is very cheap, the inhabitants having plenty of aſſes, for which they have little to do beſides carrying the ſalt from the ponds to the ſea-ſide at the ſeaſon when ſhips are here. The inhabitants load and drive their aſſes themſelves, being very glad to be employed, for they have ſcarce any other trade but this to get a penny by. The pond is not above half a mile from the landing-place, ſo that the aſſes make a great many trips in a day. They have a ſet number of turns to and fro, both forenoon and afternoon, which their owners will not exceed. At the landig-place there lies a frape-boat, as our ſeamen call it, to take in the ſalt. 'Tis made purpoſely for this uſe, with a deck reaching from the ſtern a third part of the boat, where there is a kind of bulk-head that riſes, not from the boat's bottom, but from the edge of the deck, to about two feet in height, all chalked very tight. The uſe of it is to keep the waves from daſhing into the boat, when it lies with its head to the ſhore, to take in ſalt; for here commonly runs a great ſea, and when the boat lies ſo with its head to the ſhore, the ſea breaks in over the ſtern, and would ſoon fill it, was it not for this bulk-head, which ſtops the waves that come flowing upon the deck, and makes them run off into the ſea on each ſide. To keep the boat thus with the head to the ſhore, and the ſtern to the ſea, there are two ſtrong ſtantions ſet up in the boat, the one at the head, the other in the middle of it, againſt the bulk-head, and a foot higher than the bulk-head. There is a large notch cut in the top of each of theſe ſtantions big enough for a ſmall hazer or rope to lie in, one end of which is faſtened to a poſt aſhore, and the other to a grapling or anchor lying a pretty way off at ſea; this rope ſerveth to hale the boat in and

out, and the ſtantions ſerve to keep her faſt, ſo that ſhe cannot ſwing to either ſide when the rope is hal'd tight; for the ſea would elſe fill her, or toſs her aſhore and ſtave her. The better to prevent her ſtaving and keep her the tighter together, there are two ſets of ropes more; the firſt going athwart from gunnel to gunnel, which, when the rowers benches are laid, bind the boat's ſides ſo hard againſt the ends of the benches that they cannot eaſily fall aſunder, while the benches and ropes mutually help each other, the ropes keeping the boat's ſides from flying off, and the benches from being cruſhed together inwards. Of theſe ropes there are uſually but two, dividing the boat's length, as they go acroſs the ſides, into there equal parts. The other ſet of ropes are more in number, and are ſo placed as to keep the ribs and planks of the boat from ſtarting off. For this purpoſe there are holes made at certain diſtances through the edge of the keel that runs along on the inſide of the boat, thro' which theſe ropes paſſing are laid along the ribs, ſo as to line them, or be themſelves as ribs upon them, being made faſt to them by rattans brought thither, or ſmall cords twiſted cloſe about both ropes and ribs, up to the gunnel; by which means tho' ſeveral of the nails or pegs of the boat ſhould by any ſhock fall out, yet the ropes of theſe two ſets might hold her together; eſpecially by the help of a rope going quite round the gunnel on the outſide, as our long-boats have. And ſuch is the care taken to ſtrengthen the boats, from which girding them with ropes, which our ſeamen call traping, they have the name of frape-boats. Two men ſuffice to hale her in and out, and take in the ſalt from ſhore (which is brought in bags) and put it out again. As ſoon as the boat is brought near enough to the ſhore, he who ſtands by the bulk-head takes

inſtantly

inſtantly a turn with the hazer about the bulk-head-ſtantion, and that ſtops her faſt before the ſea can turn her aſide; and when the two men have got in their loading, they hale off to ſea, till they come a little without the ſwell, where they remove the ſalt into another boat that carries it on board the ſhip. Without ſuch a frape-boat here is but bad landing at any time, for tho' 'tis commonly very ſmooth in the road, yet there falls a great ſea on the ſhore, ſo that every ſhip that comes here ſhould have ſuch a boat, and bring, or make, or borrow one of other ſhips that happen to be here; for the inhabitants have none. I have been thus particular in the deſcription of theſe frape-boats, becauſe of the uſe they may be of in any places where a great ſea falls in upon the ſhore; as it doth eſpecially in many open roads in the Eaſt and Weſt Indies, where they might therefore be very ſerviceable, but I never ſaw any of them there.

The iſland Mayo is generally barren, being dry, as I ſaid; and the beſt of it is but an indifferent ſoil. The ſandy bank that pens in the ſalt-pond hath a ſort of ſilk cotton growing upon it, and a plant that runs along upon the ground, branching out like a vine, but with very thick broad leaves. The ſilk-cotton grows on tender ſhrubs, three or four feet high, in cods as big as an apple, but of a long ſhape; which when ripe open at one end, parting leaſurely into four quarters; and at the firſt opening the cotton breaks forth. It may be of uſe for ſtuffing of pillows, or the like, but elſe is of no value, any more than that of the great cotton tree. I took of theſe cods before they were quite ripe, and laid them in my cheſt; and in two or three days they would open and throw out the cotton. Others I have bound faſt with cords, ſo that the pod could not open; and in a few days after, as ſoon as I

ſlackned the cord ever ſo little, the pod would burſt, and the cotton fly out forceably, at a very little hole, juſt as the pulp out of a roaſted apple, till all has been out of the pod. I met with this ſort of cotton afterwards at Timor (where it was ripe in November) and no where elſe in all my travels: but I found two other ſorts of ſilk cotton at Brazil, which I ſhall there deſcribe. The right cotton ſhrub grows here alſo, but not on the ſand-bank. I ſaw ſome buſhes of it near the ſhore; but the moſt of it is planted in the middle of the iſle, where the inhabitants live, cotton cloth being their chief manufacture; but neither is there any great ſtore of this cotton. There are alſo ſome trees within the iſland, but none to be ſeen near the ſea ſide; nothing but a few buſhes ſcattering up and down, againſt the ſides of the adjacent hills; for, as I ſaid before, the land is pretty high from the ſea. The ſoil is for the moſt part either a ſort of ſand, or looſe crumbling ſtone, without any freſh water ponds or ſtreams, to moiſten it; but only ſhowers in the wet ſeaſon, which run off as faſt as they fall: except a ſmall ſpring in the middle of the iſle, from which proceeds a little ſtream of water that runs thro' a valley between the hills. There the inhabitants live in three ſmall towns, having a church and a parade in each town: and theſe towns, as I was informed, are ſix or ſeven miles from the road. Pinoſe is ſaid to be the chief town, and to have two churches: St. John's the next; and the third Lagos. The houſes are very mean, ſmall, low things. They build with fig-tree, here being, as I was told, no other trees fit to build with. The rafters are a ſort of wild cane. The fruits of this iſle are chiefly figs and water melons. They have alſo callavances (a ſort of pulſe like French beans) and pumpions, for ordinary food. The fowls are flamingos, great curlews,

curlews, and Guinea hens; which the natives of thoſe iſlands call Gallena Pintada, or the painted hen; but in Jamaica, where I have ſeen alſo thoſe birds in the dry ſavannah and woods (for they love to run about in ſuch places) they are called Guinea hens. They ſeem to be much of the nature of partridges. They are larger than our hens, have long legs, and will run apace. They can fly too, but not far, having large heavy bodies, and but ſhort wings, and ſhort tails: as I have generally obſerv'd that birds have ſeldom long tails unleſs ſuch as fly much; in which their tails are uſually ſerviceable to their turning about, as a rudder to a ſhip or boat. Theſe birds have thick and ſtrong, yet ſharp bills, and pretty long claws. They feed on the ground, either on worms, which they find by tearing up the earth, or on graſhoppers, which are plentiful here. The feathers of theſe birds are ſpeckled with dark and light grey; the ſpots ſo regular and uniform, that they look more beautiful than many birds that are decked with gayer feathers. Their necks are ſmall and long, their heads alſo but little. The cocks have a ſmall riſing on their crowns, like a comb. 'Tis of the colour of a dry walnut ſhell, and very hard. They have a ſmall red gill on each ſide of their heads, like ears, ſtrutting out downwards; but the hens have none. They are ſo ſtrong that one cannot hold them, and very hardy. They are very good meat, tender, and ſweet; and in ſome the fleſh is extraordinary white; tho' ſome others have black fleſh; but both ſorts are very good. The natives take them with dogs, running them down whenever they pleaſe, for here are abundance of them. You ſhall ſee two or three hundred in a company. I had ſeveral brought on board alive, where they throve very well, ſome ſixteen or eighteen months; when they began to pine. When they

they are taken young they will become tame like our hens. The flamingos I have already deſcribed (Vol. I. p. 204.) They have alſo many other ſorts of fowl, viz. pidgeons and turtle-doves; miniotas, a ſort of land fowls as big as crows, of a grey colour, and good food; cruſias, another ſort of grey colour'd fowl almoſt as big as a crow, which are only ſeen in the night (probably a ſort of owls) and are ſaid to be good for conſumptive people, but eat by none elſe; rabeks, a ſort of large grey eatable fowls with long necks and legs, not unlike herons; and many kinds of ſmall birds.

Of land animals, here are goats, as I ſaid formerly, and aſſes good ſtore. When I was here before, they were ſaid to have had a great many bulls and cows; but the pirates, who have ſince miſerably infeſted all theſe iſlands, have much leſſened the number of thoſe; not having ſpared the inhabitants themſelves: for at my being there this time the governor of Mayo was but newly returned from being a priſoner among them, they having taken him away, and carried him about with them for a year or two.

The ſea is plentifully ſtocked with fiſh of divers ſort, viz, dolphins, bonetas, mullets, ſnappers, ſilver-fiſh, garfiſh, &c. aud here is a good bay to hale a ſain or net in. I hal'd mine ſeveral times, and to good purpoſe; dragging aſhore at one time ſix dozen of great fiſh, moſt of them large mullets of a foot and a half or two feet long. Here are alſo porpoſes, and a ſmall ſort of whales, that commonly viſit this road every day. I have already ſaid (Vol. I. p. 209) that the months of May, June, July and Auguſt, (that is, the weſt ſeaſon) are the time, when the green turtle come hither, and go aſhore to lay their eggs. I look upon it as a thing worth notice, that the turtle always, both in north

and

and ſouth latitude, lay their eggs in the wet months. It might be ſuppoſed, conſidering what heavy rains there are then in ſome places where theſe creatures lay, that their eggs would be ſpoiled by them. But the rain, tho' violent, is ſoon ſoaked up by the ſand, wherein the eggs are buried; and perhaps ſinks not ſo deep as they are laid: and keeping down the heat may make the ſand hotter below than it was before, like a hot-bed. Whatever the reaſon may be why providence determines theſe creatures to this ſeaſon to lay their eggs, rather than the dry, in fact it is ſo, as I have conſtantly obſerved; and that not only with the ſea-turtle, but with all other ſorts of amphibious animals that lay eggs; as crocodiles, aligators, guanos, &c. The inhabitants of this iſland, even their governor and padres, are all negros; wool-pated like their African neighbours, from whom 'tis likely they are deſcended; but being ſubjects to the Portugueſe they have their religion and language. They are ſtout, luſty, well-limb'd people, both men and women, fat and fleſhy; and they and their children as round and plump as little porpoſes; tho' the iſland appears ſo barren to a ſtranger as ſcarce to have food for its inhabitants. I enquired how many people there might be on the iſland, and was told by one of the padres, that here were two hundred and thirty ſouls in all. The negro governor has his patent from the Portugueſe governor of St. Jago. He is a very civil and ſenſible poor man; and they are generally a good ſort of people. He expects a ſmall preſent from every commander that loads ſalt here; and is glad to be invited on board their ſhips. He ſpends moſt of his time with the Engliſh in the ſalting ſeaſon, which is his harveſt; and indeed, all the iſlands are then fully employed in getting ſomewhat, for they have no veſſels of their own to trade with,

nor

nor do any Portugueſe veſſels come hither; ſcarce any but Engliſh, on whom they depend for trade; and tho' ſubjects of Portugal, have a particular value for us. We don't pay them for their ſalt, but for the labour of themſelves and their beaſts in lading it; for which we give them victuals, ſome money, and old cloaths, viz. Hats, ſhirts, and other cloaths; by which means many of them are indifferently well fitted out; but ſome of them go almoſt naked. When the turtle-ſeaſon comes in they watch the ſandy bays in the night, to turn them; having ſmall huts at particular places on the bays to keep them from the rain, and to ſleep in; and this is another harveſt they have for food; for by report there come a great many turtle to this and the reſt of the Cape Verd iſlands. When the turtle ſeaſon is over they have little to do but to hunt for Guinea hens, and manage their ſmall plantations. But by theſe means they have all the year ſome employment or other, whereby they get a ſubſiſtence, tho' but little elſe. When any of them are deſirous to go over to St. Jago, they get a licence from the governor, and deſire paſſage in any Engliſh ſhip that is going thither: and indeed all ſhips that lade ſalt here will be obliged to touch at St. Jago for water, for here at the bay is none, not ſo much as for drinking. 'Tis true there is a ſmall well of brackiſh water not half a mile from the landing place, which the aſſes that carry ſalt drink at; but tis very bad water. Aſſes themſelves are a commodity in ſome of theſe iſlands, ſeveral of our ſhips coming hither purpoſely to freight with them, and carry them to Barbadoes and our other plantations. I ſtaid a Mayo ſix days and got ſeven or eight tons of ſalt on board for my voyage; in which time there came alſo into this road ſeveral

ſail

ſail of merchants ſhips for ſalt, all bound with it for Newfoundland.

The 19th day of February, at about one o'clock in the morning I weighed from Mayo road, in order to water at St. Jago, which was about five or ſix leagues to the weſtward. We coaſted along the iſland St. Jago, and paſt by the port on the eaſt of it, I mention'd formerly (Vol. I. p. 210) which they call Praya; where ſome Engliſh outward-bound Eaſt India men ſtill touch, but not ſo many of them as heretofore. We ſaw the fort upon the hill, the houſes and cocoa nut trees; but I would not go in to anchor here, becauſe I expected better water on the S. W. of the iſland, at St. Jago town. By eight o'clock in the morning we ſaw the ſhips in that road, being within three leagues of it: but were forc'd to keep turning many hours to get in, the flaws of wind coming ſo uncertain; as they do eſpecially to the leeward of iſlands that are high land. At length two Portugueſe boats came off to help to tow us in; and about three o'clock in the afternoon we came to an anchor. We found here, beſides two Portugueſe ſhips bound for Brazil, whoſe boats had tow'd us in, an Engliſh pink that had taken in aſſes at one of the Cape Verd iſlands, and was bound to Barbadoes with them. Next morning I went aſhore with my officers to the governor, who treated us with ſweetmeats: I told him, the occaſion of my coming was chiefly for water; and that I deſired alſo to take in ſome refreſhments of fowls, &c. He ſaid I was welcome, and that he would order the townſmen to bring their commodities to a certain houſe, where I might purchaſe what I had occaſion for: I told him I had not money but would exchange ſome of the ſalt which I brought from Mayo for their commodities. He replied, that ſalt was indeed an acceptable commodity

dity with the poor people, but that if I intended to buy any cattle, I muſt give money for them. I contented myſelf with dunghill fowls, the governor ordering a cryer about the town to give notice to the people, that they might repair to ſuch a place with fowls, and maize for feeding them, and where they might have ſalt in exchange. So I ſent on board for ſalt, and ordered ſome of my men to truck the ſame for fowls and maize, while the reſt of them were buſy in filling water. This is the effect of their keeping no boats of their own on the ſeveral iſlands, that they are glad to buy even their own ſalt from others, for want of being able to tranſport it themſelves from iſland to iſland.

St. Jago town lies on the S.W. part of the iſland, in lat. about 15 d. N. and is the ſeat of the general governor, and of the biſhop of all the Cape Verd iſlands. This town ſtands ſcattering on the ſides of two mountains, between which there is a deep valley, which is about two hundred yards wide againſt the ſea; but within a quarter of a mile is cloſes up ſo as not to be forty yards wide. In the valley, by the ſea, there is a ſtragling ſtreet, houſes on each ſide, and a run of water in the bottom, which emties itſelf into a fine ſmall cove or ſandy bay, where the ſea is commonly very ſmooth; ſo that here is good landing at any time, tho' the road be rocky and bad for ſhips. Juſt by the landing place there is a ſmall fort, almoſt level with the ſea, where is always a court of guard kept. On the top of the hill, above the town, there is another fort; which by the wall that is to be ſeen from the road, ſeems to be a large place. They have cannon mounted there, but how many I know not; neither what uſe that fort can be of, except it be for ſalutes. The town may conſiſt of two or three hundred houſes,

all

all built of rough ſtone; there is alſo one convent, and one church.

The people in general are black, or at leaſt of a mix'd colour, except only ſome few of the better ſort, viz. the governor, the biſhop, ſome gentlemen, and ſome of the padres; for ſome of theſe alſo are black. The people about Praya are thieviſh; but thoſe of St. Jago town, living under the eye of their governor, are more orderly, tho' commonly poor, as they have but little trade; yet beſides chance ſhips of other nations, there come hither a Portugueſe ſhip or two every year, in their way to Brazil. Theſe vend among them a few European commodities, and take off their principal manufactures, viz. ſtriped cotton-cloth, which they carry with them to Brazil. Here is alſo another ſhip comes hither from Portugal for ſugar, their other manufacture, and returns with it directly thither: for 'tis reported that there are ſeveral ſmall ſugar-works on this iſland, from which they ſend home near one hundred tons every year; and they have plenty of cotton grows up in the country, wherewith they cloth themſelves, and ſend alſo a great deal to Brazil. They have alſo vines, of which they make ſome wine; but the European ſhips furniſh them with better; tho' they drink but little of any. Their chief fruits are plantains, in abundance, oranges, lemons, and citrons; both muſk and water melons, limes, guavas, pomgranates, quinces, cuſtard-apples, and papaws, &c.

The anona guanabanus, or cuſtard-apple (as we call it) is a fruit as big as a pomgranate, and much of the ſame colour. The outſide huſk, ſhell, or rind, is for ſubſtance and thickneſs between the ſhell of a pomegranate, and the peel of a Sevil orange; ſofter than this, yet more brittle than that. The coat or covering is alſo remarkable in that it is be-

ſet

ſet round with ſmall regular knobs or riſings; and the inſide of the fruit is full of a white ſoft pulp, ſweet and very pleaſant, and moſt reſembling a cuſtard of any thing, both in colour and taſte; from whence probably it is called a cuſtard-apple by our Engliſh. It has in the middle a few ſmall black ſtones or kernels, but no core, for 'tis all pulp. The tree that bears this fruit is about the bigneſs of a quince-tree, with long, ſmall, and thick ſet branches ſpread much abroad; at the extremity of here and there one of which, the fruit grows upon a ſtalk of its own about nine or ten inches long, ſlender and tough, and hanging down with its own weight. A large tree of this ſort does not bear uſually above twenty or thirty apples, ſeldom more. This fruit grows in moſt countries within the tropicks. I have ſeen of them (tho' I omitted the deſcription of them before) all over the Weſt Indies, both continent and iſlands, as alſo in Brazil, and in the Eaſt Indies.

The papaya or papaw too is found in all theſe countries, though I have not hitherto deſcribed it. It is a fruit about the bigneſs of a muſk-melon, hollow as that is, and much reſembling it in ſhape and colour, both outſide and inſide; only in the middle, inſtead of flat kernels, which the melons have, theſe have a handful of ſmall blackiſh ſeeds, about the bigneſs of pepper-corns, whoſe taſte is alſo hot on the tongue ſomewhat like pepper. The fruit itſelf is ſweet, ſoft and luſcious, when ripe; but while green 'tis hard and unſavory; though even then being boiled and eaten with ſalt-pork or beef, it ſerves inſtead of turnips, and is as much eſteemed. The papaw-tree is about ten or twelve feet high. The body near the ground may be a foot and a half or two feet diameter; and it grows up tapering to the top. It has no branches at all,

but

but only large leaves growing immediately upon ſtalks from the body. The leaves are of a roundiſh form and jag'd about the edges, having their ſtalks or ſtumps longer or ſhorter as they grow near or further from the top. They begin to ſpring from out of the body of the tree at about ſix or ſeven feet high from the ground, the trunk being bare below; but above that the leaves grow thicker and larger ſtill towards its top, where they are cloſe and broad. The fruit grows only among the leaves, and thickeſt among the thickeſt of them, inſomuch that towards the top of the tree the papaw's ſpring forth from its body as thick as they can ſtick one by another. But then lower down, where the leaves are thinner, the fruits is larger, and of the ſize I have deſcrib'd; and at the top, where they are thick, they are but ſmall, and no bigger than ordinary turnips, yet taſted like the reſt.

Their chief land animals are their bullocks, which are ſaid to be many; though they aſked us twenty dollars a-piece for them; they have alſo horſes, aſſes, and mules, deer, goats, hogs, and black-faced long-tail'd monkeys. Of fowls they have cocks and hens, ducks, Guinea-hens, both tame and wild, parakites, parrots, pidgeons, turtle-doves, herons, hawks, crab-catchers, galdens, (a larger ſort of crab-catchers) curlews, &c. Their fiſh is the ſame as at Mayo and the reſt of theſe iſlands, and for the moſt part theſe iſlands have the ſame beaſts and birds alſo; but ſome of the iſles have paſturage and employment for ſome particular beaſts more than other, and the birds are encouraged, by woods for ſhelter, and maize and fruits for food, to flock rather to ſome of the iſlands (as to this of St. Jago) than to others.

St. Jago road is one of the worſt that I have been in. There is not clean ground enough for above

three ſhips; and thoſe alſo muſt lie very near each other. One even of theſe muſt lie cloſe to the ſhore, with a land faſt there; and that is the beſt for a ſmall ſhip. I ſhould not have come in here if I had not been told that it was a ſecure place; but I found it ſo much otherways, that I was in pain to be gone. Captain Barefoot, who came to an anchor while I was here, in foul ground, loſt quickly two anchors, and I had loſt a ſmall one. The iſland Fogo ſhews itſelf from this road very plain, at about ſeven or eight leagues diſtance; aud in the night we ſaw the flames of fire iſſue from its top.

CHAP. XXXVIII.

The author's departure from St. Jago and arrival at the bay of All Saints in Brazil, with a deſcription of the country, &c.

HAVING diſpatched my ſmall affairs at the Cape Verd iſlands, I meditated on the proceſs of my voyage. I concluded it would be requiſite to touch once more at a cultivated place in theſe ſeas, where my men might be refreſhed, and might have a market wherein to furniſh themſelves with neceſſaries: for intending that my next ſtretch ſhould be quite to New Nolland, and knowing that after ſo long a run nothing was to be expected there but freſh water, if I could meet even with that there, I reſolved upon putting in firſt at ſome port of Brazil, and to provide myſelf there with whatever I might have occaſion for. Beſides the refreſhing and furniſhing my men, I aim'd alſo at the inuring them gradually, and by intervals to the fatigues that were to be expected in the remainder of the voyage, which was to be in a part of the world they were altogether ſtrangers to; none of them, except

except two young men having ever croſs'd the line.

With this deſign I ſailed from St. Jago on the 22d of February, with the wind at E. N. E. and N. E. fair weather, and a briſk gale. We ſteered away S. S. E. and S. S. E. half eaſt, till in the lat. of 7 d. 50 m. we met with many ripplings in the ſea, like a tide or current, which ſetting againſt the wind cauſed ſuch a ripling. We continued to meet theſe currents from that lat. till we came into the lat. of 3 d. 22 N. when they ceaſed. During this time we ſaw ſome bonetas and ſharks, and catched one of theſe. We had the true general trade wind blowing freſh at N. E. till in the lat. of 4. d. 40 m. N. when the wind varied, and we had ſmall gales, with ſome tornadoes. We were then to the eaſt of St. Jago, 4 d. 54 m. when we got into lat. 3 deg. 2 min. N. (where I ſaid the ripling ceas'd) and long. to the eaſt of St. Jago 5 d. 2 min. we had the wind whiffling between the S. by E. and E. by N. ſmall gales, frequent calms, very black clouds, with much rain. In the lat. of 3 d. 8 m. N. and long. E. from St. Jago 5 d. 8 min. we had the wind from the S. S. E. to the N. N. E. faint, and often interrupted with calms. While we had calms we had an opportunity to try the current we had met with hitherto, and found that it ſet N. E. by E. half a knot, which is twelve miles in twenty four hours: ſo that here it ran at the rate of half a mile an hour, and had been much ſtronger before. The rains held us by intervals till the lat. of 1 d. N. with ſmall gales of wind between the S. S. E. and S. E. by E. and ſometimes calm: afterwards we had the wind between the S. and S. S. E. till we croſs'd the line, ſmall winds, calms, and pretty fair weather. We ſaw but few fiſh beſides porpoſes, but of them a great many, and ſtruck one of them.

It was the tenth day of March, about the time of the equinox, when we croſs'd the equator, having had all along from the lat. of 4 d. 40 min. N. where the true trade-wind left us, a great ſwell out of the S. E. and but ſmall uncertain gales, moſtly ſoutherly, ſo that we crept to the ſouthward but ſlowly. I kept up againſt theſe as well as I could to the ſouthward; and when we had now and then a flurry of wind at E. I ſtill went away due ſouth, purpoſely to get to the ſouthward as faſt as I could; for while near the line I expected to have but uncertain winds, frequent calms, rains, tornadoes, &c. which would not only retard my courſe, but endanger ſickneſs alſo among my men; but eſpecially thoſe who were ill provided with cloaths, or were too lazy to ſhift themſelves when they were drenc'd with the rains. The heat of the weather made them careleſs of doing this; but taking a dram of brandy, which I gave them when wet, with a charge to ſhift themſelves, they would however lie down in their hammocks with their wet cloaths; ſo that when they turn'd out they cauſed an ill ſmell where-ever they came, and their hammocks would ſtink ſufficiently: that I think the remedying of this is worth the care of commanders that croſs the line; eſpecially when they are, it may be, a month or more e'er they get out of the rains, at ſome times of the year, as in June, July, or Auguſt.

What I have here ſaid about the currents, winds, calms, &c. in this paſſage is chiefly for the farther illuſtration of what I have heretofore obſerv'd in general about theſe matters, and eſpecially as to croſſing the line, in my diſcourſe of the winds, &c. in the torrid zone; which obſervations I have had very much confirmed to me in the courſe of this voyage; and I ſhall particularize in ſeveral of them as they come in my way. And, indeed, I think I may

may ſay this of the main of the obſervations in that treatiſe, that the clear ſatisfaction I had about them, and how much I might rely upon them, was a great eaſe to my mind during this vexatious voyage; wherein the ignorance, and obſtinacy withal, of ſome under me, occaſion'd me a great deal of trouble: tho' they found all along, and were often forced to acknowledge it, that I was ſeldom out in my conjectures, when I told them uſually beforehand what winds, &c. we ſhould meet with at ſuch or ſuch particular places we ſhould come at.

Pernambuc was the port that I deſigned for at my firſt ſetting out from St. Jago, as a place moſt proper for my purpoſe, by reaſon of its ſituation, lying near the extremity of Cape St. Auguſtine, the eaſternmoſt promontory of Brazil; by which means it not only enjoys the greater benefit of the ſea-breezes, and is conſequently more healthy than other places to the ſouthward, but is withal leſs ſubject to the ſoutherly coaſting trade-winds, that blow half the year on this ſhore, which was now drawing on, and might be troubleſome to me: ſo that I might both hope to reach ſooneſt Pernambuc, as moſt directly and neareſt in my run; and might thence alſo more eaſily get away to the ſouthward than from Bahia de Todos los Santos, or Rio Janeira.

But notwithſtanding theſe advantages I propoſed to myſelf in going to Pernambuc, I was ſoon put by that deſign thro' the refractorineſs of ſome under me, and the diſcontents and backwardneſs of ſome of my men. For the calms and ſhiftings of wind which I met with, as I was to expect, in croſſing the line, made them, who were unacquainted with theſe matters, almoſt heartleſs as to the purſuit of the voyage, as thinking we ſhould never be able to weather Cape St. Auguſtine: and tho' I told

them by that time we ſhould get to about three degrees ſouth of the line, we ſhould again have a true briſk general trade wind from the north eaſt, that would carry us to what part of Brazil we pleaſed, yet they would not believe it till they found it ſo. This, with ſome other unforeſeen accidents, not neceſſary to be mention'd in this place, meeting with the averſion of my men to a long unknown voyage, made me juſtly apprehenſive of their revolting, and was a great trouble and hindrance to me. So that I was obliged partly to alter my meaſures, and met with many difficulties, the particulars of which I ſhall not trouble the reader with: but I mention thus much of it in general for my own neceſſary vindication, in my taking ſuch meaſures ſometimes for proſecuting the voyage as the ſtate of my ſhip's crew, rather than my own judgment and experience, determined me to. The diſorders of my ſhip made me think at preſent that Pernambuc would not be ſo fit a place for me; being told that ſhips ride there two or three leagues from the town, under the command of no forts; ſo that whenever I ſhould have been aſhore it might have been eaſy for my diſcontented crew to have cut or ſlip'd their cables and have gone away from me; many of them diſcovering already an intention to return to England, and ſome of them declaring openly that they would go no further onwards than Brazil. I alter'd my courſe therefore, and ſtood away for Bahio de todos los Santos, or the Bay of All Saints, where I hoped to have the governor's help, if need ſhould require, for ſecuring my ſhip from any ſuch mutinous attempt; being forced to keep myſelf all the way upon my guard, and to lie with my officers, ſuch as I could truſt, and with ſmall-arms upon the quarter-deck; it ſcarce being ſafe

for

for me to lie in my cabin, by reaſon of the diſcontents among my men.

On the 23d of March we ſaw the land of Brazil, having had thither, from the time when we came into the true trade-wind again after croſſidg the line, very fair weather and briſk gales, moſtly at E. N. E. The land we ſaw was about twenty leagues to the north of Bahia; ſo I coaſted along ſhore to the ſouthward. This coaſt is rather low than high, with ſandy bays all along by the ſea.

A little within land are many very white ſpots of ſand, appearing like ſnow, and the coaſt looks very pleaſant, being checker'd with woods and ſavannahs. The trees in general are not tall, but they are green and flouriſhing. There are many ſmall houſes by the ſea-ſide, whoſe inhabitants are chiefly fiſhermen. They come off to ſea on barklogs, made of ſeveral logs faſtned ſide to ſide, that have one or two maſts with ſails to them. There are two men in each barklog, one at either end, having ſmall low benches, raiſed a little above the logs, to ſit and fiſh on, and two baſkets hanging up at the maſt or maſts; one to put their proviſions in, the other for their fiſh. Many of theſe were a fiſhing now, and two of them came on board, of whom I bought ſome fiſh. In the afternoon we ſailed by one very remarkable piece of land, where on a hill there was a church dedicated to the Virgin Mary.

I coaſted along till the evening, and then brought to, and lay by till the next morning. About two hours after we were brought to, there came a ſail out of the offing (from ſeaward) and lay about a mile to the windward of us all night. In the morning, upon ſpeaking with her, ſhe proved to be a Portugueſe ſhip bound to Bahia, therefore I ſent my boat on board and deſired to have one of his mates to pilot me in; he anſwered, that he had not

a mate capable of it, but that he would ſail in before me, and ſhew me the way; and that if he went into the harbour in the night, he would hang out a light for me. He ſaid we had not far in and might reach it before night with a tolerable gale; but that with ſo ſmall a one as now we had we could not do it: ſo we jogg'd on till night, and he then hung out his light, which we ſteered after, ſounding as we went in. I kept all my men on deck, and had an anchor ready to let go on occaſion. We had the tide of ebb againſt us, ſo that we went in but ſlowly; and it was about the middle of the night when we anchor'd. Immediately the Portugueſe maſter came on board to ſee me, to whom I returned thanks for his civilities; and indeed I found much reſpect, not only from this perſon, but from all of that nation, both here and in other places, who were ready to ſerve me on all occaſions. The place that we anchored in was about two miles from the harbour where the ſhips commonly ride; but the fear I had leſt my people ſhou'd run away with the ſhip, made me haſten to get a licence from the governor to run up into the harbour, and ride among their ſhips, cloſe by one of their forts. So on the 25th of March about ten o'clock in the morning the tide ſerving I went thither, and was piloted by the ſuper-intendent there, whoſe buſineſs it is to carry up all the king of Portugal's ſhips that come hither, and to ſee them well moored. He brought us to an anchor oppoſite the town, at the outer part of the harbour, which was then full of ſhips, within one hundred and fifty yards of a ſmall fort that ſtands on a rock half a mile from the ſhore.

Bahia de todos los Santos lies in lat. 13 d. ſouth. It is the moſt conſiderable town in Brazil, whether in reſpect of the beauty of its buildings, its bulk,

or

or its trade and revenue. It has the convenience of a good harbour that is capable to receive ſhips of the heavieſt burthen: The entrance of which is guarded with a ſtrong fort that ſtands without the harbour, called St. Antonio: its lights (which they hang out purpoſely for ſhips) we ſaw the ſame night before we came in. There are other ſmaller forts that command the harbour, one of which ſtands on a rock in the ſea, about half a mile from the ſhore. Cloſe by this fort all ſhips muſt paſs that anchor here, and muſt ride alſo within half a mile of it at fartheſt, between this and another fort, that ſtands on a point at the inner part of the harbour, and is called the Dutch fort, but muſt ride neareſt to the former, all along oppoſite the town, where there is good holding ground, and leſs expoſed to the ſoutherly winds that blow very hard here. They commonly ſet in about April, but blow hardeſt in May, June, July and Auguſt: but the place where the ſhips ride is expoſed to theſe winds not above three points of the compaſs.

Beſides theſe, there is another fort that fronts the harbour, and ſtands on the hill upon which the town ſtands. The town itſelf conſiſts of about two thouſand houſes, the major part of which cannot be ſeen from the harbour; but ſo many as appear in ſight, with a mixture of trees between them, and all placed on a riſing hill, afford a very pleaſant proſpect.

There are in this town thirteen churches, chapels, hoſpitals, convents, beſides one nunnery; viz. the Eccleſia Major or cathedral, the jeſuits college, which are the chief, and both in view from the harbour: St. Antonio, Sta. Barbara, both pariſh churches; the Franciſcans church, and the Dominicans; and two convents of Carmelites; a chapel for ſeamen, cloſe by the ſea ſide, where boats commonly land, and

and the ſeamen go immediately to prayers; another chapel for poor people, at the farther end of the ſame ſtreet, which runs along by the ſhore; and a third chapel for ſoldiers, at the edge of the town, remote from the ſea; and an hoſpital in the middle of the town. The nunnery ſtands at the outer-edge of the town next the fields, wherein by report there are ſeventy nuns. Here lives an archbiſhop who has a fine palace in the town; and the governor's palace is a fair ſtone building, and looks handſome to the ſea, tho' but indifferently furniſhed within: both Spaniards and Portugueſe in their plantations abroad, as I have generally obſerved, affecting to have large houſes: but are little curious about furniture, except pictures, ſome of them. The houſes of the town are two or three ſtories high, the walls thick and ſtrong, being built with ſtone, and covered with pantile; and many of them have balconies. The principal ſtreets are large, and all of them paved or pitched with ſmall ſtones. There are alſo parades in the moſt eminent places of the town, and many gardens, as well within the town as in the out-parts of it, wherein are fruits, herbs, ſalladings and flowers in great variety, but ordered with no great care nor art.

The governor who reſides here is called Don John de Lancaſtario, being deſcended, as they ſay, from our Engliſh Lancaſter family; and he has a reſpect for our nation on that account, calling them his countrymen. I waited on him ſeveral times and always found him very courteous and civil. Here are about four hundred ſoldiers in the garriſon. They commonly draw up and exerciſe in a large parade before the governor's houſe; and many of them attend him when he goes abroad. The ſoldiers are decently clad in brown linen, which in theſe hot countries is far better than woollen; but

I never ſaw any clad in linen but only theſe. Beſides the ſoldiers in pay, he can ſoon have ſome thouſands of men in arms on occaſion. The magazine is on the ſkirts of the town, on a ſmall eminence between the nunnery and the ſoldiers church. 'Tis large enough to hold two or three thouſand barrels of powder; but I was told it ſeldom has more than one hundred, ſometimes but 80. There are always a band of ſoldiers to guard it, and centinels looking out both day and night.

A great many merchants always reſide at Bahia; for 'tis a place of great trade: I found here above thirty great ſhips from Europe, with two of the king of Portugal's ſhips of war for their convoy; beſides two ſhips that traded to Africa only, either to Angola, Gambia, or other places on the coaſt of Guinea; and abundance of ſmall craft, that carry commodities from one part of Brazil to another.

The merchants who live here are ſaid to be rich, and to have many negro ſlaves in their houſes, both of men and women. Themſelves are chiefly Portugueſe, foreigners having but little commerce with them; yet here was one Mr. Cock an Engliſh merchant, a very civil gentleman and of good repute. He had a patent to be our Engliſh conſul, but did not care to take upon him any public character, becauſe Engliſh ſhips ſeldom come hither, here having been none in eleven or twelve years before this time. Here was alſo a Dane, and a French merchant or two; but all have their effects tranſported to and from Europe in Portugueſe ſhips, none of any other nation being admitted to trade hither. There is a cuſtom-houſe by the ſea-ſide, where all goods imported or exported are entered. And to prevent abuſes there are five or ſix boats that take their turns to row about the harbour, ſearching any boats they ſuſpect to be running goods.

The

The chief commodities that the European ſhips bring hither, are linen cloths, both coarſe and fine; ſome woollens alſo, as bays, ſerges, perpetuana's, &c. hats, ſtockings, both ſilk and thread, biſcuit-bread, wheat-flour, wine, (chiefly port) oil-olive, butter, cheeſe, &c. and ſalt-beef and pork would there alſo be good commodities. They bring hither alſo iron, and all ſorts of iron tools; pewter veſſels of all ſorts, as diſhes, plates, ſpoons, &c. looking-glaſſes, beads, and other toys; and the ſhips that touch at St. Jago bring thence, as I ſaid, cotton cloth, which is afterwards ſent to Angola.

The European ſhips carry from thence ſugar, tobacco, either in roll or ſnuff, never in leaf, that I know of: theſe are the ſtaple commodities. Beſides which, here are dye-woods, as fuſtick, &c. with woods for other uſes, as ſpeckled wood, Brazil, &c. They alſo carry home raw hides, tallow, train-oil of whales, &c. Here are alſo kept tame monkeys, parrots, parakites, &c. which the ſeamen carry home.

The ſugar of this country is much better than that which we bring home from our plantations; for all the ſugar that is made here is clay'd, which makes it whiter and finer than our Muſcovada, as we call our refined ſugar. Our planters ſeldom refine any with clay, unleſs ſometimes a little to ſend home as preſents for their friends in England. Their way of doing it is by taking ſome of the whiteſt clay and mixing it with water, 'till it is like cream. With this they fill up the pans of ſugar, that are ſunk two or three inches below the brim by the draining off the moloſſes out of it; firſt ſcraping off the thin hard cruſt of the ſugar that lies at the top, and would hinder the water of the clay from ſoaking thro' the ſugar of the pan. The refining is made by this percolation. For ten or twelve days time

time that the clayiſh liquor lies ſoaking down the pan, the white water whitens the ſugar as it paſſes thro' it; and the groſs body of the clay itſelf grows hard on the top, and may be taken off at pleaſure; when ſcraping off with a knife the very upper part of the ſugar, which will be a little ſullied, that which is underneath will be white almoſt to the bottom; and ſuch as is called Brazil ſugar is thus whitened. When I was here this ſugar was ſold for 50 s. per 100lb. and the bottoms of the pots, which is very courſe ſugar, for about 20 s. per 100 lb. both ſorts being then ſcarce; for here was not enough to lade the ſhips, and therefore ſome of them were to lie here till the next ſeaſon.

The European ſhips commonly arrive here in February or March, and they have generally quick paſſages; finding at that time of the year briſk gales to bring them to the line, little trouble, then in croſſing it, and briſk E. N. E. winds afterwards to bring them hither. They commonly return from hence about the latter end of May, or in June. It was ſaid when I was here that the ſhips would ſail hence the 20th day of May; and therefore they were all very buſy, ſome in taking in their goods, others in careening and making themſelves ready. The ſhips that come hither uſually careen at their firſt coming; here being a hulk belonging to the king for that purpoſe. This hulk is under the care of the ſuper-intendent I ſpoke of, who has a certain ſum of money for every ſhip that careens by her. He alſo provides firing and other neceſſaries for that purpoſe; and the ſhips commonly hire of the merchants here each two cables to moor by all the time they lie here, and ſo ſave their own hempen cables; for theſe are made of a ſort of hair, that grows on a certain kind of trees, hanging down from the top of their bodies, and is very like the

black

black coyre in the Eaſt-Indies, if not the ſame. Theſe cables are ſtrong and laſting: and ſo much for the European ſhips.

The ſhips that uſe the Guinea trade are ſmall veſſels in compariſon of the former. They carry out from hence rum, ſugar, the cotton cloths of St. Jago, beads, &c. and bring in return, gold, ivory, and ſlaves; making very profitable returns.

The ſmall craft that belong to this town are chiefly employed in carrying European goods from Bahia, the center of the Braſilian trade, to the other places on this coaſt, and bring back hither ſugar, tobacco, &c. They are ſailed chiefly with negro ſlaves; and about Chriſtmas theſe are moſtly employed in whale-killing: for about that time of the year a ſort of whales as they call them, are very thick on this coaſt. They come alſo into the harbours and inland lakes, where the ſeamen go out and kill them. The fat of them is boiled to oil; the lean is eaten by the ſlaves and poor people: and I was told by one that had frequently eat of it that the fleſh was very ſweet and wholeſome. Theſe are ſaid to be but ſmall whales, yet here are ſo many, and ſo eaſily killed, that they get a great deal of money by it. Thoſe that ſtrike them buy their licence for it of the king: and I was informed that he receives 30000 dollars per annum for this fiſhery. All the ſmall veſſels that uſe this coaſting traffic are built here; and ſo are ſome men of war alſo for the king's ſervice. There was one in building when I was here, a ſhip of forty or fifty guns: the timber of this country is very good and proper for this purpoſe. I was told it was very ſtrong, and more durable than any we have in Europe; and they have enough of it. As for their ſhips that uſe the European trade, ſome of them that I ſaw there were Engliſh built, taken from us by the

French

French during the late war, and ſold by them to the Portugueſe.

Beſides merchants and others that trade by ſea from this port, here are other pretty wealthy men, and ſeveral artificers and tradeſmen of moſt ſorts, who by labour and induſtry maintain themſelves very well; eſpecially ſuch as can arrive at the purchaſe of a negro ſlave or two. And indeed, excepting people of the loweſt degree of all, here are ſcarce any but what keep ſlaves in their houſes. The richer ſort, beſides the ſlaves of both ſexes whom they keep for ſervile uſes in their houſes, have men ſlaves who wait on them abroad for ſtate; either running by their horſes ſide when they ride out, or to carry them to and fro on their ſhoulders in the town when they make ſhort viſits near home. Every gentleman or merchant is provided with things neceſſary for this ſort of carriage. The main thing is a pretty large cotton hammock of the Weſt India faſhion, but moſtly died blue, with large fringes of the ſame, which hang down on each ſide. This is carried on the negro's ſhoulders by the help of a bambo about twelve or fourteen feet long, to which the hammock is hung, and a covering comes over the pole, hanging down on each ſide like a curtain; ſo that the perſon ſo carried cannot be ſeen unleſs he pleaſes; but may either lie down, having pillows for his head, or may ſit up by being a little ſupported with theſe pillows, and by letting both his legs hang out over one ſide of the hammock. When he hath a mind to be ſeen he puts by his curtain, and ſalutes every one of his acquaintance whom he meets in the ſtreets: for they take a pride in greeting one another from their hammocks, and will hold long conferences thus in the ſtreets: but then their two ſlaves who carry the hammock have each a ſtrong well made ſtaff, with a fine iron fork

at

at the upper end, and a ſharp iron below, like the reſt for a muſket, which they ſtick faſt in the ground, and let the pole or bambo of the hammock reſt upon them, till their maſters buſineſs or the complement is over. There is ſcarce a man of any faſhion, eſpecially a woman, who will paſs the ſtreets but ſo carried in a hammock. The chief mechanic traders here, are ſmiths, hatters, ſhoemakers, tanners, ſawyers, carpenters, coopers, &c. Here are alſo taylors, butchers, &c. which laſt kill the bullocks very dexterouſly, ſticking them at one blow with a ſharp pointed knife in the nape of the neck, having firſt drawn them cloſe to a rail; but they dreſs them very ſlovenly. It being Lent when I came hither there was no buying any fleſh till Eaſter-eve, when a great number of bullocks were killed at once in the ſlaughter-houſes within the town, men, women and children flocking thither with great joy to buy, and a multitude of dogs, almoſt ſtarved, following them; for whom the meat ſeemed fitteſt, it was ſo lean. All theſe tradeſmen buy negros, and train them up to their ſeveral employments, which is a great help to them: and having ſo frequent trade to Angola, and other parts of Guinea, they have a conſtant ſupply of blacks both for their plantations and town. Theſe ſlaves are very uſeful in this place for carriage, as porters, for as here is a great trade by ſea, and the landing-place is at the foot of a hill, too ſteep for drawing with carts, ſo there is great need of ſlaves to carry goods up into the town, eſpecially for the inferior ſort; but the merchants have alſo the convenience of a great crane that goes with ropes or pullies, one end of which goes up while the other goes down. The houſe in which this crane ſtands is on the brow of the hill towards the ſea, hanging over the precipice; and there are planks ſet ſhelving againſt the bank

bank from thence to the bottom, againſt which the goods lean or ſlide as they are hoiſted up or let down. The negro ſlaves in this town are ſo numerous, that they make up the greateſt part or bulk of the inhabitants; every houſe, as I ſaid, having ſome, both men and women, of them. Many of the Portugueſe, who are batchelors, keep of theſe black women for miſſes, tho' they know the danger they are in of being poiſoned by them, if ever they give them any occaſion of jealouſy. A gentleman of my acquaintance, who had been familiar with his cook-maid, lay under ſome ſuch apprehenſions from her when I was there. Theſe ſlaves alſo of either ſex will eaſily be engaged to do any ſort of miſchief; even to murder, if they are hired to do it, eſpecially in the night; for which reaſon, I kept my men on board as much as I could: for one of the French king's ſhips being here had ſeveral men murdered by them in the night, as I was credibly informed.

Having given this account of the town of Bahia, I ſhall next ſay ſomewhat of the country. There is a ſalt water lake runs forty leagues, as I was told, up the country, N. W. from the ſea, leaving the town and Dutch fort on the ſtarboard ſide. The country all round about is for the moſt part a pretty flat even ground, not high, nor yet very low; It is well watered with rivers, brooks, and ſprings, neither wants it for good harbours, navigable creeks and good bays for ſhips to ride in. The ſoil in general is good, naturally producing very large trees of divers ſorts, and fit for any uſes. The ſavannahs alſo are loaden with graſs, herbs, and many ſorts of ſmaller vegetables; and being cultivated, produce any thing that is proper for thoſe hot countries, as ſugar-canes, cotton, indico, tobacco, maize, fruit-trees of ſeveral kinds, and eatable roots of all

ſorts. Of the ſeveral kinds of trees that are here, I ſhall give an account of ſome, as I had it partly from an inhabitant of Bahia, and partly from my knowledge of them otherwiſe, viz. ſapiera, vermiatico, comeſſerie, guitteba, Serrie, as they were pronounced to me, three ſorts of mangrove, ſpeckled wood, fuſtick, cotton-trees of three ſorts, &c. together with fruit-trees of divers ſorts that grow wild, beſides ſuch as are planted.

Of timber-trees, the ſapiera is ſaid to be large and tall; it is very good timber, and is made uſe of in building houſes, and ſo is the vermiatico, a tall ſtreight-bodied tree, of which they make plank two feet broad, and they alſo make canoes with it. Comeſſerie and guitteba are chiefly uſed in building ſhips; theſe are as much eſteemed here, as oaks are in England, and they ſay either ſort is harder and more durable than oak. The Serrie is a ſort of tree much like elm, very durable in water. Here are alſo all the three ſorts of mangrove trees, viz. the red, the white, and the black, which I have deſcribed (Vol. I. p. 189.) The bark of the red mangrove, is here uſed for tanning of leather, and they have great tan-pits for it. The black mangrove grows larger here than in the Weſt Indies, and of it they make good plank. The white mangrove is larger and tougher than in the Weſt Indies; of theſe they make maſts and yards for barks.

There grow here wild or baſtard cocoa nut trees, neither ſo large nor ſo tall as the common ones in the Eaſt or Weſt Indies. They bear nuts as the others, but not a quarter ſo big as the right cocoa nuts. The ſhell is full of kernel, without any hollow place or water in it; and the kernel is ſweet and wholeſome, but very hard both for the teeth and for digeſtion. Theſe nuts are in much eſteem for making beads for Pater-noſter's, boles of tobacco

bacco pipes, and other toys; and every ſmall ſhop here has a great many of them to ſell. At the top of theſe baſtard cocoa-trees, among the branches, there grows a ſort of long black thread like horſe-hair, but much longer, which by the Portugueſe is called treſabo. Of this they make cables which are very ſerviceable, ſtrong and laſting, for they will not rot as cables made of hemp, though they lie expoſed both to wet and heat. Theſe are the cables which I ſaid they keep in their harbours here, to let to hire to European ſhips, and reſemble the coyre-cables.

Here are three ſorts of cotton trees that bear ſilk-cotton. One ſort is ſuch as I have formerly deſcrib- (Vol. I. p. 297.) by the name of the cotton tree. The other two ſorts I never ſaw any where but here. The trees of theſe latter ſorts are but ſmall in compariſon of the former, which are reckoned the biggeſt in all the Weſt India woods, yet are however of a good bigneſs and height. One of theſe laſt ſorts is not ſo full of branches as the other of them; neither do they produce their fruit the ſame time of the year; for one ſort had its fruit juſt ripe, and was ſhedding its leaves while the other ſort was green, and its fruit ſmall and growing, having but newly done bloſſoming; the tree being as full of young fruit as an apple-tree ordinarily in England. Theſe laſt yield very large pods, about ſix inches long, and as big as a man's arm. It is ripe in September and October; then the pod opens, and the cotton burſts out in a great lump as big as a man's head. They gather theſe pods before they open, otherways it would fly all away. It opens as well after it is gathered, and then they take out the cotton, and preſerve it to fill pillows and bolſters, for which uſe it is very much eſteemed; but it is fit for nothing elſe, being ſo ſhort that it cannot be

ſpun. It is of a tawney colour, and the ſeeds are black, very round, and as big as a white pea. The other ſort is ripe in March or April. The fruit or pod is like a large apple, and very round. The outſide ſhell is as thick as the top of one's finger. Within this there is a very thin whitiſh bag or ſkin which incloſeth the cotton. When the cotton-apple is ripe the outer thick green ſhell ſplits itſelf into five equal parts from the ſtem to tail, and drops off, leaving the cotton hanging upon the ſtem, only pent up in its fine bag. A day or two afterwards the cotton ſwells by the heat of the ſun, breaks the bag and burſts out, as big as a man's head; and then as the wind blows it is by degrees driven away, a little at a time, out of the bag that ſtill hang upon the ſtem, and is ſcattered about the fields, the bag ſoon follow the cotton, and the ſtem the bag. Here is alſo a little of the right Weſt India cotton ſhrub, but none of the cotton is exported, nor do they make much cloth of it.

This country produces great variety of fine fruits, as very good oranges of three or four ſorts; (eſpecially one ſort of China Oranges,) limes in abundance, pomgranets, pomecitrons, plantains, bonanoes, right cocoa-nuts guavas, cocoa-plumbs, (called here munſheroos) wild-grapes, ſuch as I have deſcribed (Vol. I. p. 51.) beſides ſuch grapes as grow in Europe. Here are alſo hog-plumbs, cuſtard-apples, ſour-ſops, caſhews, papaws (called here mamoons) jennipaws (called here jenni-papaws) manchineel-apples and mangos. Mangos are yet but rare here; I ſaw none of them but in the Jeſuit's garden, which has a great many fine fruits, and ſome cinamon-trees. Theſe, both of them, were firſt brought from the Eaſt Indies, and they thrive here very well; ſo do pumplemuſſes, brought

alſo

alſo from thence, and both China and Sevile oranges are here very plentiful as well as good.

The ſour-ſop (as we call it) is a large fruit as big as a man's head, of a long or oval ſhape, and of a green colour; but one ſide is yellowiſh when ripe. The outſide rind or coat is pretty thick, and very rough, with ſmall ſharp knobs; the inſide is full of ſpungy pulp, within which are alſo many black ſeeds or kernels, in ſhape and bigneſs like a pumpion-ſeed. The pulp is very juicy, of a pleaſant taſte, and wholeſome. You ſuck the juice out of the pulp, and ſo ſpit it out. The tree or ſhrub that bears this fruit grows about ten or twelve feet high, with a ſmall ſhort body; the branches growing pretty ſtraight up, for I never ſaw any of them ſpread abroad. The twigs are ſlender and tough; and ſo is the ſtem of the fruit. This fruit grows alſo both in the Eaſt and Weſt Indies.

The Caſhew is a fruit as big as a pippin, pretty long, and bigger near the ſtem than at the other end, growing tapering. The rind is ſmooth and thin, of a red and yellow colour. The ſeed of this fruit grows at the end of it, it is of an olive colour ſhaped like a kidney, and about the bigneſs of a large bean, but not altogether ſo flat. The tree is as big as an apple-tree, with branches not thick, yet ſpreading off. The boughs are groſs, the leaves broad and round, and in ſubſtance pretty thick. This fruit is ſoft and ſpongy when ripe, and ſo full of juice that in biting it the juice will run out on both ſides of one's mouth. It is very pleaſant, and gratefully rough on the tongue; and is accounted a very wholeſome fruit. This grows both in the Eaſt and Weſt Indies, where I have ſeen and eaten of it.

The jennipaw or jennipapaw is a ſort of fruit of the calabaſh or gourd-kind. It is about the bigneſs

of a duck-egg, ſomewhat of an oval ſhape, and of a grey colour. The ſhell is not altogether ſo thick nor ſo hard as a calabaſh; 'tis full of whitiſh pulp mixed with ſmall flat ſeeds; and both pulp and ſeeds muſt be taken into the mouth, where ſucking out the pulp you ſpit out ſeeds. It is of a ſharp and pleaſing taſte, and is very innocent. The tree that bears it is much like an aſh, ſtrait-bodied, of a good height, and clean from limbs till near the top, where there branches forth a ſmall head. The rind is of a pale grey, and ſo is the fruit. We uſed of this tree to make helves or handles for axes (for which it is very proper) in the Bay of Campeachy; where I have ſeen of them, and no where elſe but here.

Beſides theſe, here are many ſorts of fruits which I have not ſeen any where but here; as Ariſahs, mericaſahs, petangos, &c. Ariſahs are an excellent fruit, not much bigger than a large cherry, ſhaped like a catharine-pear, being ſmall at the ſtem, and ſwelling bigger towards the end. They are of a greeniſh colour, and have ſmall ſeeds as big as muſtard-ſeeds. They are ſomewhat tart, yet pleaſant, and very wholeſome, and may be eaten by ſick people.

Mericaſah's, are an excellent fruit, of which there are two ſorts; one growing on a ſmall tree or ſhrub, which is counted the beſt; the other growing on a kind of ſhrub like a vine, which they plant about arbours to make a ſhade, having many broad leaves. The fruit is as big as a ſmall orange, round and green. When they are ripe they are ſoft and fit to eat, full of white pulp mixed thick with little black ſeeds, and there is no ſeparating one from the other, till they are in your mouth, when you ſuck in the white pulp and ſpit out the ſtones. They are tart, pleaſant, and very wholſome.

Petangos

Petangos are a ſmall red fruit, that grow alſo on ſmall trees, and are as big as cherries, but not ſo globular, having one flat ſide, and alſo five or ſix ſmall protuberant ridges. It is a very pleaſant tart fruit, and has a pretty large flattiſh ſtone in the middle.

Petumbos, are a yellow fruit (growing on a ſhrub like a vine) bigger than cherries, with a pretty large ſtone; but rough in the mouth.

Mungaroos, are a fruit as big as cherries, red on one ſide and white on the other ſide; they are ſaid to be full of ſmall ſeed, which are commonly ſwallowed in eating them.

Muckiſhaws, are ſaid to be a fruit as big as crab-apples, growing on large trees. They have alſo ſmall ſeeds in the middle, and are well taſted.

Ingwas, are like the locuſt-fruit, four inches long, and one broad. They grow on high trees.

Otee, is a fruit as big as a large cocoa-nut. It hath a huſk on the outſide, and a large ſtone within, and is accounted a very fine fruit.

Muſteran-de-ovas, are a round fruit as big as large hazle-nuts, covered with thin brittle ſhells of a blackiſh colour; they have a ſmall ſtone in the middle, incloſed within a black pulpy ſubſtance, which is of a pleaſant taſte. The outſide ſhell is chewed with the fruit, and ſpit out with the ſtone, when the pulp is ſucked from them. The tree that bears this fruit is tall, large, and very hard wood. I have not ſeen any of theſe five laſt named fruits, but had them thus deſcribed to me by an Iriſh inhabitant of Bahia; tho' as to this laſt, I am apt to believe, I may have both ſeen and eaten of them in Achin in Sumatra.

Palm-Berries (called here Dendees) grow plentifully about Bahia; the largeſt are as big as wall-nuts; they grow in bunches on the top of the body

of the tree, among the roots of the branches or leaves, as all fruits of the palm kind do. Theſe are the ſame kind of berries or nuts as thoſe they make the palm-oil with on the coaſt of Guinea, where they abound; and I was told that they make oil with them here alſo. They ſometimes roaſt and eat them; but when I had one roaſted to prove it, I did not like it.

Phyſick-nuts, as our ſeamen call them, are called here pineon; and agnus caſtus is called here carrepat; theſe both grow here, ſo do mendibees, a fruit like phyſick-nut. They ſcorch them in a pan over the fire before they eat them.

Here are alſo great plenty of cabbage-trees, and other fruits, which I did not get information about, and which I had not the opportunity of ſeeing; becauſe this was not the ſeaſon, it being our ſpring, and conſequently their autumn, when their beſt fruits were gone, though ſome were left. However I ſaw abundance of wild berries in the woods and fields, but I could not learn their names or nature.

They have whithal good plenty of ground fruit, as callavances, pine-apples, pumpions, water-melons, muſk-melons, cucumbers, and roots, as yams, potatoes, caſſavas, &c. Garden herbs alſo good ſtore, as cabbages, turnips, onions, leeks, and abundance of other ſalading, and pot-herbs. Drugs of ſeveral ſorts, viz. ſaſſafras, ſnake root, &c. beſides the woods I mentioned for dying, and other uſes, as fuſtick, ſpeckled-wood, &c.

I brought home with me from hence a good number of plants, dried between the leaves of books.

Here are ſaid to be great plenty and variety of wild fowl, viz. yammas, maccaws (which are called here jackoos, and are a larger ſort of parrots, and ſcarce) parrots, parakites, flamingos, carrion-

crows,

crows, chattering crows, cockrecoes, bill-birds, finely painted, curraſoes, doves, pidgeons, jenettees, clocking-hens, crab-catchers, galdens, currecoos, Moſcovy ducks, common ducks, widgeons, teal, curlews, men of war birds, boobies, noddies, pelicans, &c.

The yemma is larger than a ſwan, grey feathered, with a long thick ſharp pointed bill.

The carrion crow and chattering crow, are called here mackeraws, and are like thoſe I deſcribed in the Weſt Indies; (Vol. I. p. 68 and 69) The bill of the chattering crow is black, and the upper-bill is round, bending downwards like a hawk's bill, and riſes up in a ridge almoſt ſemicircular, very ſharp, both at the ridge or convexity, and at the point or extremity: the lower bill is flat and ſhuts even with it. I was told by a Portugueſe here that their negro wenches make love potions with theſe birds. And the Portugueſe care not to let them have any of theſe birds, to keep them from that ſuperſtition: As I found one afternoon when I was in the fields with a padre and another, who ſhot two of them, and hid them, as they ſaid, for that reaſon. They are not good food, but their bills are reckoned a good antidote againſt poiſon.

The bill-birds are ſo called by the Engliſh, from their monſtrous bills, which are as big as their bodies. I ſaw none of theſe birds here, but ſaw ſeveral of the breaſts flea'd off and dried, for the beauty of them; the feathers were curiouſly coloured with red, yellow, and orange-colour.

The curraſoes (called here mackeraws) are ſuch as are in they bay of Campeachy [Vol. I. p. 69.]

Here are plenty of turtle-doves; and two ſorts of wild pidgeons, the one ſort blackiſh, the other a light grey: the blackiſh or dark grey are the largeſt, being as big as our queeſts, or wood-pidgeons

geons in England. Both ſorts are very good meat, and are in ſuch plenty from May to September, that a man may ſhoot eight or ten dozen in ſeveral ſhots at one ſtanding, in a cloſe miſty morning, when they come to feed on berries that grow in the woods.

The Jenetee is a bird about the ſize of a lark, with blackiſh feathers, and yellow legs and feet. 'Tis accounted very wholeſome food.

Clocking-hens, are much like the crab-catchers, which I have deſcribed (Vol. I. p. 72.) but the legs are not quite ſo long. They keep always in ſwampy wet places, tho' their claws are like land-fowls claws. They make a noiſe or cluck like our brood hens, or dunghill-hens, when they have chickens, and for that reaſon they are called by the Engliſh clocking hens. There are many of them in the bay of Campeachy (tho' I omitted to ſpeak of them there) and elſewhere in the Weſt Indies. There are both here and there four ſorts of theſe long-leg'd fowls, near a-kin to each other, as ſo many ſub-ſpecies of the ſame kind; viz. crab catchers, clocking-hens, galdens (which three are in ſhape and colour like herons in England, but leſs; the galden, the largeſt of the three, the crab-catcher the ſmalleſt) and a fourth ſort, which are black, but ſhaped like the other, and have long legs and ſhort tails; theſe are about the ſize of crab-catchers, and feed as they do.

Currecoos, are water fowls, about the ſize of pretty large chickens, of a bluiſh colour, with ſhort legs and tail; they feed alſo in ſwampy ground, and are very good meat. I have not ſeen of them elſewhere.

The wild ducks here are ſaid to be of two ſorts, the Muſcovy, and the common ducks. In the wet ſeaſon here are abundance of them, but in the dry time

time but few. Widgeon and teal alſo are ſaid to be very plentiful here in the wet ſeaſon.

To the ſouthward of Bahia there are alſo oſtridges plenty, tho', 'tis ſaid, they are not ſo large as thoſe of Africa; they are found chiefly in the ſouthern parts of Braſil, eſpecially among the large ſavannahs near the river of Plate; and from thence further ſouth towards the ſtreights of Magellan.

As for tame fowl at Bahia, the chief beſide their ducks, are dunghill-fowls, of which they two ſorts; one ſort much of the ſize of our cocks and hens; the other very large: the feathers of theſe laſt are a long time coming forth; ſo that you ſee them very naked when half grown; but when they are full grown and well feathered, they appear very large fowls, as indeed they are; neither do they want for price, for they are ſold at Bahia for half a crown or three ſhillings apiece, juſt as they are brought firſt to market out of the country, when they are ſo lean as to be ſcarce fit to eat.

The land animals here are horſes, black cattle, ſheep, goats, rabbits, hogs, leopards, tygers, foxes, monkeys, pecarees (a ſort of wild hogs, called here pica) armadillo, alligators, guanos (called quittee) lizards, ſerpents, toads, frogs, and a ſort of amphibious creatures called by the Portugueſe cachoras de agua, in Engliſh water-dogs.

The leopards and tygers of this country are ſaid to be large and very fierce: but here on the coaſt they are either deſtroyed, or driven back towards the heart of the country; and are therefore ſeldom found but in the borders and out-plantations, where they oftentimes do miſchief. Here are three or four ſorts of monkeys, of different ſizes and colours. One ſort is very large, and another ſort very ſmall; theſe laſt are ugly in ſhape and feature, and have a ſtrong ſcent of muſk.

Here

Here are ſeveral ſorts of ſerpents, many of them vaſtly great, and moſt of them very venomous: as the rattle-ſnake: and for venom, a ſmall green ſnake is bad enough, no larger than the ſtem of a tobacco pipe, and about eighteen inches long, very common here.

They have here alſo the amphiſbæna, or two-headed ſnake, of a grey colour, mix'd with black-iſh ſtripes, whoſe bite is reckoned to be incurable. It is ſaid to be lind, tho' it has two ſmall ſpecks in each head like eyes: but whether it ſees or not I cannot tell. They ſay it lives like a mole, moſtly under ground; and that when it is found above ground it is eaſily killed, becauſe it moves but ſlowly; neither is its ſight (if it hath any) ſo good as to diſcern any one that comes near to kill it: as few of theſe creatures fly at a man, or hurt him but when he comes in their way. 'Tis about fourteen inches long, and about as thick as the inner joint of a man's middle finger; being of one and the ſame thickneſs from one end to the other, with a head at each end, (as they ſaid; for I cannot vouch it, for that I had was cut ſhort at one end) and both alike in ſhape and bigneſs; and 'tis ſaid to move with either head foremoſt, indifferently; whence 'tis called by the Portugueſe, cobra de dos cabeſas, the ſnake with two heads.

The ſmall black ſnake is a very venomous creature.

There is alſo a grey ſnake, with red and brown ſpots all over its back. 'Tis as thick as a man's arm, and about three feet long, and is ſaid to be venomous, I ſaw one of theſe.

Here are two ſorts of very large ſnakes or ſerpents: one of them a land ſnake, and the other a water ſnake. The land ſnake is of a grey colour, and about eighteen or twenty feet long: not very venomous

venomous, but ravenous. I was promiſed the ſight of one of their ſkins, but wanted opportunity.

The water-ſnake is ſaid to be near thirty feet long. Theſe live wholly in the water, either in large rivers, or great lakes, and prey upon any creature that comes within their reach, be it man or beaſt. They draw their prey to them with their tails; for when they ſee any thing on the banks of the river or lake where they lurk, they ſwing about their tails ten or twelve feet over the bank; and whatever ſtands within their ſweep is ſnatched with great violence into the river, and drowned by them. Nay it is reported very credibly that if they ſee only a ſhade of any animal at all on the water, they will flouriſh their tails to bring in the man or beaſt whoſe ſhade they ſee, and are oftentimes too ſucceſsful in it. Wherefore men that have buſineſs near any place where theſe water monſters are ſuſpected to lurk, are always provided with a gun, which they often fire, and that ſcares them away, or keeps them quiet. They are ſaid to have great heads, and ſtrong teeth about ſix inches long. I was told by an Iriſhman who lived here, that his wife's father was very near being taken by one of them about the time of my firſt arrival here, when his father was with him up in the country; for the beaſt flouriſhed his tail for him, but came not near enough by a yard or two, however it ſcared him ſufficiently.

The amphibious creatures here which I ſaid are called by the Portugueſe cuchoras de agua, by the natives jiya and carigueibeiu, are the Braſilian otters, or water-dogs, and ſaid to be as big as ſmall maſtiffs, and are all hairy and ſhaggy from head to tail. They have four ſhort legs, a pretty long head and ſhort tail; and are of a blackiſh colour. They live in freſh water ponds, and oftentimes come aſhore

and

and ſun themſelves, but retire to the water if aſſaulted. They are eaten and ſaid to be good food. Several of theſe creatures which I have now ſpoken of I have not ſeen, but informed myſelf about them while I was here at Bahia, from ſober and ſenſible perſons among the inhabitants, among whom I met with ſome that could ſpeak Engliſh.

In the ſea upon this coaſt there is great ſtore and diverſity of fiſh, viz. Jew-fiſh, for which there is a great market at Bahia in Lent; tarpoms, mullets, groopers, ſnooks, gar-fiſh (called here goolions), goraſſes, barramas, coquindas, cavallies, cuchoras (or dog-fiſh) conger-eels, herrings (as I was told) the ſerrew, the olio de boy, (I write and ſpell them juſt as they were named to me) whales, &c.

Here is alſo ſhell-fiſh, (though in leſs plenty about Bahia than on other parts of the coaſt,) viz. lobſters, craw-fiſh, ſhrimps, crabs, oyſters of the common ſort, conchs, wilks, cockles, muſcles, periwinkles, &c. Here are three ſorts of ſea-turtle, viz. hawkſbill, loggerhead, and green; but none of them are in any eſteem, neither Spaniards nor Portugueſe loving them; nay they have a great antipathy againſt them, and would much rather eat a porpoſe, though our Engliſh count the green turtle very extraordinary food. The reaſon that is commonly given in the Weſt Indies for the Spaniards not caring to eat of them, is the fear they have left being uſually foul-bodied, and many of them pox'd (lying, as they do, promiſcuouſly with their negrines and other ſhe-ſlaves) they ſhould break out loathſomely like lepers; which this ſort of food, it is ſaid, does much incline men to do, ſearching the body, and driving out any ſuch groſs humours, for which cauſe many of our Engliſh valetudinarians have gone from Jamaica (though there they have alſo turtle) to the Iſland Caimanes, at the laying-time,

time, to live wholly upon turtle that then abound there, purpoſely to have their bodies ſcoured by this food, and their diſtempers driven out; and many of them have been ſaid to have found good ſucceſs in it. But this by the way. The hawkſbill-turtle on this coaſt of Brazil is moſt ſought after of any, for its ſhell, which by report of thoſe I have converſed with at Bahia, is the cleareſt and beſt-clouded tortoiſe-ſhell in the world. I had ſome of it ſhewn me, which was indeed as good as I ever ſaw. They get a pretty deal of it in ſome parts on this coaſt, but it is very dear.

Beſides this port of Bahia de todos los Santos, there are two more principal ports on Brazil, where European ſhips trade, viz. Pernambuc and Rio Janeira, and I was told that there go as many ſhips to each of theſe places as to Bahia, and two men of war to each place for their convoys. Of the other ports in this country none is of greater note than that of St. Paul's, where they gather much gold; but the inhabitants are ſaid to be a ſort of banditti, or looſe people that live under no government; but their gold brings them all ſorts of commodities that they need, as cloths, arms, ammunition, &c. The town is ſaid to be large and ſtrong.

CHAP. XXIX.

Of the winds, ſeaſons of the year, &c. at Bahia: the author's voyage from thence to New Holland, with an account of the inhabitants, natural productions, &c. of that country.

MY ſtay here at Bahia was about a month, during which time the vice roy of Goa came hither from thence in a great ſhip, ſaid to be richly laden with all ſorts of India goods, but ſhe did not break

break bulk here, being bound to Liſbon; only the vice roy intended to refreſh his men (of whom he had loſt many, and moſt of the reſt were very ſickly, having been four months in their voyage hither) and ſo to take in water, and depart for Europe, in company with the other Portugueſe ſhips bound thither, who had orders to be ready to ſail by the twentieth of May. He deſired me to carry a letter for him, directed to his ſucceſſor, the new vice roy of Goa, which I did, ſending it thither afterwards by captain Hammond, whom I found near the Cape of Good Hope. The refreſhing my men, and taking in water, was the main alſo of my buſineſs here, beſides having the better opportunity to compoſe the diſorders among my crew: which, as I have before related, were grown to ſo great a height, that they could not without great difficulty be appeaſed: however, finding opportunity, during my ſtay in this place, to allay in ſome meaſure the ferment that had been raiſed among my men, I now ſet myſelf to provide for carrying on my voyage with more heart than before, and put all hands to work, in order to do it as faſt as the backwardneſs of my men would permit; who ſhewed continually their unwillingneſs to proceed farther. Beſides, their heads were generally filled with ſtrange notions of ſoutherly winds that were now ſetting in (and there had been already ſome ſlurries of them) which, as they ſurmiſed, would hinder any farther attempts of going on to the ſouthward, ſo long as they ſhould laſt.

The winds begin to ſhift here in April and September, and the dry and wet ſeaſons of the year alter with them. In April the ſoutherly winds make their entrance on this coaſt, bringing in the wet ſeaſon, with violent tornadoes, thunder and lightning, and much rain. In September the other

other coaſting trade, at eaſt north eaſt comes in, and clears the ſky, bringing fair weather. This, as to the change of wind, is what I have obſerved, in my diſcourſe of winds, &c. but as to the change of weather accompanying it ſo exactly here at Bahia, this is a particular exception to what I have experienced in all other places of ſouth latitudes that I have been in between the tropicks, or thoſe I have heard of, for there the dry ſeaſons ſets in, in April, and the wet about October or November, ſooner or later (as I have ſaid that they are, in ſouth latitudes, the reverſe of the ſeaſons, or weather, in the ſame months in north latitudes,) whereas on this coaſt of Brazil, the wet ſeaſon comes in about April, at the ſame time that it doth in north latitudes, and the dry (as I have ſaid here) in September; the rains here not laſting ſo far in the year as in other places; for in September the weather is uſually ſo fair, that in the latter part of that month they begin to cut their ſugar-canes here, as I was told; for I enquired particularly about the ſeaſons; though this, as to the ſeaſon of cutting of canes, which I was now aſſured to be in September, agrees not very well with what I was formerly told, that in Brazil they cut the canes in July. And ſo, as to what is ſaid, that in managing their canes they are not confined to the ſeaſons, this ought to have been expreſsed only of planting them; for they never cut them but in the dry ſeaſon.

But to return to the ſoutherly winds, which came in (as I expected they would) while I was here; theſe daunted my ſhip's company very much, tho' I had told them they were to look for them; but being ignorant as to what I told them farther, that theſe were only coaſting-winds, ſweeping the ſhore to about forty or fifty leagues in breadth from

it; and imagining that they had blown ſo all the ſea over, between America and Africa, and being confirmed in this their opinion by the Portugueſe pilots of the European ſhips, with whom ſeveral of my officers converſed much, and who were themſelves as ignorant that theſe were only coaſting trade winds (themſelves going away before them, in their return homewards, till they croſs the line, and ſo having no experience of the breadth of them) being thus poſſeſſed with a conceit that we could not ſail from hence till September, this made them ſtill the more remiſs in their duties, and very liſtleſs about getting things in readineſs for our departure. However I was the more diligent myſelf to have the ſhip ſcrubb'd, and to ſend my water caſks aſhore to get them trimmed, my beer being now out. I went alſo to the governor to get my water filled, for here being but one watering place (and the water running low, now at the end of the dry ſeaſon) it was always ſo crouded with the European ſhips boats, who were preparing to be gone, that my men could ſeldom come near it, till the governor very kindly ſent an officer to clear the water place for my men, and to ſtay there till my water-caſks were all full, whom I ſatisfied for his pains. Here I alſo got on board nine or ten tuns of ballaſt, and made my boatſwain fit the rigging that was amiſs; and I enquired alſo of my particular officers whoſe buſineſs it was, whether they wanted any ſtores, eſpecially pitch and tar, for that here I would ſupply myſelf before I proceeded any farther; but they ſaid they had enough, tho' it did not afterwards prove ſo.

I commonly went aſhore every day, either upon buſineſs, or to recreate myſelf in the fields, which were very pleaſant, and the more for a ſhower of rain now and then, that uſhers in the wet ſeaſon. Several ſorts of good fruits were alſo ſtill remaining,

eſpecially

eſpecially oranges, which were in ſuch plenty, that I and all my company ſtocked ourſelves for our voyage with them, which did us a great kindneſs, and took in alſo a good quantity of rum and ſugar; but for fowls, they being here lean and dear, I was glad I had ſtocked myſelf at St. Jago. But by the little care my officers took for freſh proviſions, one might conclude, they did not think of going much farther. Beſides, I had like to have been embroiled with the clergy here (of the inquiſition, as I ſuppoſe) and ſo my voyage might have been hindered. What was ſaid to them of me, by ſome of my company that went aſhore, I know not; but I was aſſured by a merchant there, that if they got me into their clutches (and it ſeems, when I was was laſt aſhore they had narrowly watched me) the governor himſelf could not releaſe me. Beſides I might either be murdered in the ſtreets, as he ſent me word, or poiſoned, if I came aſhore any more; and therefore he adviſed me to ſtay on board. Indeed I had now no further buſineſs aſhore but to take leave of the governor, and therefore took his advice.

Our ſtay here was till the 23d of April. I would have gone before if I could ſooner have fitted myſelf; but was now earneſt to be gone, becauſe this harbour lies open to the S. and S. S. W. which are raging winds here, and now was the ſeaſon for them. We had had two or three touches of them; and one pretty ſevere: and the ſhips ride there ſo near each other, that if a cable ſhould fail, or an anchor ſtart, you are inſtantly aboard of one ſhip or other: and I was more afraid of being diſabled here in harbour by theſe bluſtring winds, than diſcouraged by them, as my people were, from proſecuting the voyage; for at preſent I even wiſh'd for a briſk ſoutherly wind as ſoon as I ſhould be once well

out of the harbour, to ſet me the ſooner into the true general trade wind.

The tide of flood being ſpent, and having a fine land-breeze, on the 23d in the morning, I went away from the anchoring place before it was light, and then lay by till day that we might ſee the better how to go out of the harbour. I had a pilot that belonged to Mr. Cock who went out with me, to whom I gave three dollars; but I found I could as well have gone out myſelf, by the ſoundings I made as I came in. The wind was E. by N. and fair weather. By ten o'clock I was got paſt all danger, and then ſent away my pilot. At twelve Cape Salvadore bore N. diſtant ſix leagues, and we had the winds between the E. by N. and S. E. a conſiderable time, ſo that we kept along near the ſhore, commonly in ſight of it. The ſoutherly blaſts had now left us again; for they come at firſt in ſhort flurries, and ſhift to other points (for ten or twelve days ſometimes) before they are quite ſet in: and we had uncertain winds, between ſea and land-breezes, and the coaſting-trade, which was itſelf unſettled.

The eaſterly-winds at preſent made me doubt I ſhould not weather a great ſhoal which lies in lat. between 18 and 19 d. S. and runs a great way into the ſea, directly from the land, eaſterly. Indeed the weather was fair (and continued ſo a good while) ſo that I might the better avoid any danger from it: and if the wind came to the ſouthward, I knew I could ſtretch off to ſea; ſo that I jogg'd on couragiouſly. The 27th of April we ſaw a ſmall brigantine under the ſhore plying to the ſouthward.

We alſo ſaw many men of war birds and boobies, and abundance of albicore fiſh. Having ſtill fair weather, ſmall gales, and ſome calms, I had the opportunity of trying the current, which I found

to

to ſet ſometimes northerly and ſometimes ſoutherly: and therefore knew I was ſtill within the verge of the tide. Being now in the lat. of the Abrohlo ſhoals, which I expected to meet with, I ſounded, and had water leſſening from forty to thirty three, and ſo to twenty five fathom: but then it roſe again to thirty three, thirty five, thirty ſeven, &c. all coral rocks. While we were on this ſhoal (which we croſs'd towards the further part of it from land, where it lay deep, and ſo was not dangerous) we caught a great many fiſh with hook and line; and be evening amplitude we had 6 d. 38 min. eaſt variation. This was the 27th of April; we were then in lat. 18 d. 13 min. S. and eaſt longitude from Cape Salvadore 31 min. On the 29th, being then in lat. 18 d. 39 min. S. we had ſmall gales from the W. N. W. to the W. S. W. often ſhifting. The 30th we had the winds from W. to S. S. E. ſqualls and rain; and we ſaw ſome dolphins and other fiſh about us. We were now out of ſight of land, and had been ſo four or five days: but the winds now hanging in the ſouth was an apparent ſign that we were ſtill too near the ſhore to receive the true general eaſt-trade; as the eaſterly winds we had before ſhew'd that we were too far off the land to have the benefit of the coaſting ſouth-trade: and the faintneſs of both theſe winds, and their often ſhifting from the S. S. W. to the S. E. with ſquals, rain and ſmall gales, were a confirmation of our being between the verge of the S. coaſting-trade, and that of the true trade, which is here, regularly, S. E.

The third of May being in lat. 20 d. and merid. diſtance weſt from Cape Salvadore two hundred and thirty four miles, the variation was 7 d. We ſaw no fowl but ſhear-waters, as our ſeaman call them, being a ſmall black fowl that ſweep the water as they fly, and are much in the ſeas that lie without

either of the tropicks: they are not eaten. We catched three ſmall ſharks, each ſix feet four inches long; and they were very good food for us. The next day we catch'd three more of the ſame ſize, and eat them alſo, eſteeming them good fiſh boil'd and preſs'd, and then ſtew'd with vinegar and pepper.

We had nothing of remark from the third of May to the tenth, only now and then ſeeing a ſmall whale ſpouting up the water. We had the wind eaſterly, and ſtood with it to the ſouthward, running in this time from the lat. of 20 d. to 29 d. 5 min. S. and having then 7 d 3 m. E. long. from Cape Salvadore; the variation increaſing upon us, at preſent, not withſtanding we went eaſt. We had all along a great difference between the morning and evening amplitudes; uſually a degree or two, and ſometimes more. We were now in the true trade, and therefore made good way to the ſouthward, to get without the verge of the general trade wind into a weſterly wind's way, that might carry us towards the Cape of Good Hope. By the 12th of May, being in lat. 31 d. 10 m. we met with weſterly winds, which freſhened on us, and did not leave us till a little before we made the cape. Sometimes it blew ſo hard that it put us under a forecourſe; eſpecially in the night; but in the day time we had commonly our main-top-ſail rift. We met with nothing of moment; only paſt by a dead whale, and ſaw millions (as I may ſay) of ſea-fowls about the carcaſs (and as far round about it as we could ſee) ſome feeding, and the reſt flying about or ſitting on the water, waiting to take their turns. We firſt diſcovered the whale by the fowls; for indeed I never ſaw ſo many fowls at once in my life before, their numbers being inconceivably great: They were of divers ſorts, in bigneſs, ſhape and colour.

colour. Some were almoſt as big as geeſe, of a grey colour, with white breaſts, and with ſuch bills, wings, and tails. Some were pintado birds, as big as ducks, and ſpeckled black and white. Some were ſhear-waters; ſome petrels; and there were ſeveral ſorts of large fowls. We ſaw of theſe birds, eſpecially the pintado-birds, all the ſea over from about two hundred leagues diſtant from the coaſt of Brazil, to within much the ſame diſtance of New Holland. The pintado is a ſouthern bird, and of that temperate zone; for I never ſaw of them much to the northward of 30 d. ſouth. The pintado-bird is as big as a duck; but appears, as it flies, about the bigneſs of a tame pidgeon, having a ſhort tail, but the wings very long, as moſt ſea-fowls have; eſpecially ſuch as theſe that fly far from the ſhore, and ſeldom come near it: for their reſting is to ſit afloat upon the water; but they lay, I ſuppoſe, aſhore. There are three ſorts of theſe birds, all of the ſame make and ſize, and are only different in colour. The firſt is black all over; the ſecond ſort are grey, with white bellies and breaſts. The third ſort, which is the true pintado, or painted bird, is curiouſly ſpotted with white and black. Their heads, and the tips of their wings are alſo edged quite round with ſuch a ſmall black liſt; only within the black on the tip of their wings there is a white ſpot ſeemingly as they fly (for then their ſpots are beſt ſeen) as big as a half-crown. All this is on the outſide of the tails and wings; and as there is a white ſpot in the black tip of the wings, ſo there is in the middle of the wings which is white, a black ſpot; but this, towards the back of the bird, turns gradually to a dark grey. The back itſelf from the head to the tip of the tail, and the edge of the wings next to the back, are all over ſpotted with fine ſmall, round, white and black ſpots, as big a

a ſilver two-pence, and as cloſe as they can ſtick one by another: the belly, thighs, ſides, and inner part of the wings are of a light grey. Theſe birds, of all the ſorts, fly many together, never high, but almoſt ſweeping the water. We ſhot one a while after on the water in a calm, and a water-ſpaniel we had with us brought it in; but it was ſo damaged, that the picture could not be taken to advantage; and its ſpots are beſt ſeen when the feathers are ſpread as it flies.

The petrel is a bird not much unlike a ſwallow, but ſmaller, and with a ſhorter tail. 'Tis all over black, except a white ſpot on the rump. They fly ſweeping like ſwallows, and very near the water. They are not ſo often ſeen in fair weather; being foul-weather birds, as our ſeamen call them, and preſaging a ſtorm when they come about a ſhip; who for that reaſon don't love to ſee them. In a ſtorm they will hover cloſe under the ſhip's ſtern, in the wake of the ſhip (as 'tis called) or the ſmoothneſs which the ſhip's paſſing has made on the ſeas: and there as they fly (gently then) they pat the water alternately with their feet, as if they walk'd upon it; tho' ſtill upon the wing. And from hence the ſeamen give them the name of petrels, in alluſion to St. Peter's walking upon the lake of Geneſareth.

We alſo ſaw many bunches of ſeaweeds in the lat. of 39. 32. and by judgment, near the meridian of the iſland Triſtian d'Aconha; and then we had about 2 d. 20 min. eaſt variation; which now again decreaſed as we ran to the eaſtward, till near the meridian of Aſcention, where we found little or no variation; but from thence, as we ran farther to the eaſt, our variation increaſed weſterly.

Two days before I made the C. of Good Hope, my variation was 7 d. 58 min. weſt. I was then in 43 degrees 27 minutes eaſt longitude from Cape Salvadore,

Salvadore, being in lat. 35 d. 30 min. this was the firſt of June. The ſecond of June I ſaw a large black fowl, with a whitiſh flat bill, fly by us; and took great notice of it, becauſe in the Eaſt-India waggoner, or pilot-book, there is mention made of large fowls, about the ſize of ravens, with white flat bills and black feathers, that fly not above thirty leagues from the Cape, and are looked on as a ſign of ones being near it. My reckoning made me think myſelf above ninety leagues from the C. according to the longitude which the Cape hath in the common ſea-charts; ſo that I was in ſome doubt whether theſe were the fowls ſpoken of in the waggoner, or whether thoſe fowls did not fly farther off ſhore than is there mentioned; or whether, as it prov'd, I might not be nearer the C. than I reckoned myſelf to be: for I found, ſoon after, that I was not then above twenty-five or thirty leagues at moſt from the Cape. Whether the fault was in the charts laying down the Cape too much to the eaſt from Brazil, or rather in our reckoning, I could not tell; but our reckonings are liable to ſuch uncertainties from ſteerage, log, currents, half-minute-glaſſes, and ſometimes want of care, as in ſo long a run cauſe often a difference of many leagues in the whole account.

Moſt of my men who kept journals imputed it to the half-minute-glaſſes; and indeed we had not a good glaſs in the ſhip beſides the half-watch or two hour-glaſſes. As for our half-minute-glaſſes we tried them all at ſeveral times, and found thoſe that we had uſed from Brazil as much too ſhort, as others we had uſed before were too long, which might well make great errors in thoſe ſeveral reckonings. A ſhip ought therefore to have its glaſſes very exact: and beſides, an extraordinary care ſhould be uſed in heaving the log, for fear of giving

ing too much ſtray-line in a moderate gale; and alſo to ſtop quickly in a briſk gale; for when a ſhip runs eight, nine, or ten knots, half a knot or a knot is ſoon run out and not heeded: but to prevent danger, when a man thinks himſelf near land, the beſt way is to look out betimes, and lie by in the night; for a commander may err eaſily himſelf, beſides the errors of thoſe under him, tho' never ſo carefully eyed.

Another thing that ſtumbled me here was the variation, which, at this time, by the laſt amplitude I had I found to be but 7 d. 58 min. W. whereas the variation at the Cape (from which I found myſelf not thirty leagues diſtant) was then computed, and truly, about 11 d. or more: and yet a while after this, when I was got ten leagues to the eaſtward of the Cape, I found the variation but 10 d. 40 min. W. whereas it ſhould have been rather more than at the Cape. Theſe things, I confeſs puzzled me; neither was I fully ſatisfied as to the exactneſs of the taking the variation at ſea; for in a great ſea, which we often meet with, the compaſs will traverſe with the motion of the ſhip; beſides the ſhip may and will deviate ſomewhat in ſteering, even by the beſt helmſmen: and then when you come to take an azimuth, there is often ſome difference between him that looks at the compaſs, and the man that takes the altitude of the ſun; and a ſmall error in each, if the error of both ſhould be one way will make it wide of any great exactneſs. But what was moſt ſhocking to me, I found that the variation did not always increaſe or decreaſe in proportion to the degrees of longitude eaſt or weſt, as I had a notion they might do to a certain number of degrees of variation eaſt or weſt, at ſuch or ſuch particular meridians. But finding in this voyage that the difference of variation did not bear a

regular

regular proportion to the difference of longitude, I was much pleaſed to ſee it thus obſerved in a ſcheme ſhewn me after my return home, wherein are repreſented the ſeveral variations in the Atlantic Sea, on both ſides the equator; and there, the line of no variation in that ſea is not a meridian line, but goes very oblique, as do thoſe alſo which ſhew the increaſe of variation on each ſide of it. In that draught there is ſo large an advance made as well towards the accounting for theſe ſeemingly irregular increaſes and decreaſes of variation towards the S.E. coaſt of America, as towards the fixing a general ſcheme or ſyſtem of the variation every where, which would be of ſuch great uſe in navigation, that I cannot but hope that the ingenious author, Capt. Halley, who to his profound ſkill in all theories of theſe kinds, hath added and is adding continually perſonal experiments, will e'er long oblige the world with a fuller diſcovery of the courſe of the variation, which hath hitherto been a ſecret. For my part I profeſs myſelf unqualified for offering at any thing of a general ſcheme; but ſince matter of fact, and whatever increaſes the hiſtory of the variation, may be of uſe towards the ſettling or confirming the theory of it, I ſhall here once for all inſert a table of all the variations I obſerv'd beyond the equator in this voyage, both in going out and returning back; and what errors there may be in it, I ſhall leave to be corrected by the obſervations of others.

A Table of Variations.

1699		D. M. S. Lat.	Longit. D. M.	D. M. Variat.
Mar.	14	6 15	1 47 *a*	3 27 E.
	21	12 45	12 9	3 27
April	25	14 49	0 10 *b*	7 0
	28	18 13	0 31	6 38
	30	19 0	2 20	6 30
May	2	19 22	3 51	8 15
	3	20 1	3 40	7 0
	5	22 47	3 48	9 40
	6	24 23	3 53	7 36
	7	25 44	3 53	10 15
	8	26 47	4 35	7 14
	9	28 9	5 50	9 45
	10	29 5	7 3	11 41
	11	29 23	7 38	12 47
	17	34 58	18 43	5 40
	18	34 54	19 6	6 19
	19	35 48	19 45	5 6
	23	39 42	27 1	2 55
	25	39 11	31 35	2 0
June	1	35 30	43 27	7 58 W.
	5	35 8	0 23 *c*	10 40
	6	36 7	3 6	11 10
	8	36 17	10 3	15 0
	9	35 59	12 0	19 38
	12	35 20	20 18	21 35
	14	35 5	26 13	23 50
	15	34 51	29 24	25 56
	17	34 27	36 8	24 54
	19	34 17	39 24	25 29
	20	34 15	42 25	24 22
	22	33 34	45 41	22 15

a W. from St. Jago. *b* E. from C. Salvadore in Brazil.
c E. from C. G. Hope.

June

1699.	D.	M. S.Lat.	D.	M. Longit.	D.	M. Variat.
June	25	35 8	45	28	24	30 W
	28	36 40	49	33	22	50
	29	36 40	53	12	22	44
	30	36 15	56	22	21	40
July	1	35 35	58	44	19	45
	4	33 32	66	22	16	40
	6	31 30	68	34	12	20
	7	31 45	69	0	12	2
	10	32 39	70	21	13	36
	11	33 4	72	0	12	29
	13	31 17	74	43	10	0
	15	29 20	75	25	10	28
	18	28 16	78	29	9	51
	23	26 43	84	19	9	11
	24	26 28	85	20	8	9
	25	26 14	85	52	8	40
	26	25 36	86	21	8	20
	27	26 43	86	16	7	0
	29	27 38	87	25	8	20
	31	26 54	88	1	9	0
Aug.	5	25 30	86	3	7	24
	15	24 41	86	2 *d*	6	6
	17	23 2	0	22	7	6
	20	19 37	3	00	7	0
	24	19 52	4	41	7	7
	25	19 45	5	10	6	40
	27	19 24	6	11	5	18
	28	18 38	6	57	6	12
Sept.	6	17 16	9	18	4	3
	7	16 9	8	57	2	7

d E. from Shark's-Bay in New Holland

Dec.

1699		D. M. S. Lat.	D. M. Longit.		D. M. Variat.	
Sept.	8	15 37	9 34		2 20	
	10	13 55	10 55		1 47	
	11	13 12	11 42		1 47	
Dec.	29	5 1	6 34	*e*	1 2	E
1700 *Jan.*	3	1 32	6 53		4 8	
Feb.	13	0 9	2 48	*f*	4 0	
	16	0 12	7 31		6 26	
	21	0 12	15 23		8 45	
	23	0 43	18 0		8 45	
	27	2 43	19 41		9 50	
March	10	5 10	0 5	*g*	1 0	
	13	5 35	0 44	*h*	9 0	
	30	5 15	6 4		8 25	W
April	6	3 32	8 25		7 16	
	22	1 32	0 37	*i*	3 0	
May	1	3 0		*k*	2 15	E
	24	9 59	0 25	*l*	0 15	W
	27	14 33	3 30		1 25	
June	2	19 44	8 7		5 38	
	3	19 51	9 58		6 10	
	4	19 46	11 6		6 20	
	5	20 0	12 22		4 58	
	6	20 0	14 17		7 20	
	9	19 59	16 1		6 32	
	11	9 57	17 42		8 1	
	12	19 48	19 0		6 0	
Nov.	7	21 26		*m*	9 0	
	14	27 1	35 35		16 50	
	15	27 10	36 34		18 57	
	16	27 11	37 54		17 24	

e E. from Babao-Bay in I. Timor.
f E. from C. Maba in N. Guinea.
g E. from C. St. George on I. N. Britannia.
h W. from ditto.
i W. from C. Maba.
k At anchor off I. Ceram.
l W. from Babao-Bayr
m W. from Princes Island by Java-head.

1701		D. M. S. I at.	D. M. Longit.	D. M. Variat.
Nov.	19	28 14	41 40	19 39 W
	21	29 24	44 47	20 50
	23	29 42	47 34	21 38
	24	30 16	49 26	26 0
	25	30 40	51 24	22 38
	27	31 51	55 5	22 40
	29	32 55	56 28	27 10
	30	31 55	57 25	27 10
Dec.	1	31 57	58 17	24 30
	2	31 57	59 33	27 57
	4	32 3	61 45	24 50
	6	32 15	66 0	23 30
	7	37 28	68 36	24 48
	8	33 49	64 38	21 53
	9	32 49	70 9	24 0
	11	32 50	71 45	21 15
	13	31 55	72 32	20 16
	14	31 35	73 39	20 0
	15	32 21	75 22	20 0
	17	33 5	79 39	18 42
	18	33 0	80 39	17 15
	21	34 39	82 46	16 41
	22	34 36	83 19	14 36
	23	34 21	83 42	14 0
1701 *Jan.*	25	34 38	84 21	14 0
	15	31 25	2 32 *n*	10 20
	16	30 5	4 42	9 36
	17	28 46	6 8	8 25

n W. from the Table-land at the C. Good Hope.

1701		D. M. S. Lat.	D. M. Longit.	D. M. Variat.
Jan.	18	27 26	7 32	7 40 W
	19	26 11	9 9	7 30
	20	25 00	10 49	7 9
	21	23 42	12 34	6 55
	22	22 51	14 10	5 56
	23	21 48	15 17	5 32
	24	21 24	15 51	4 56
	26	19 57	16 48	4 20
	27	19 10	17 22	3 24
	28	18 13	18 23	4 0
	29	17 22	19 29	2 0
Feb.	16	12 53	3 8 *o*	1 50
	17	11 55	4 42	1 10
	18	11 17	5 30	0 20
	19	10 22	6 32	1 10
	21	We made the I. Aſcention.		

o W. from Santa Helena.

But

But to return from this digreſſion; having fair weather, and the winds hanging ſoutherly, I jog'd on to the eaſtward, to make the Cape. On the third of June we ſaw a ſail to leeward of us, ſhewing Engliſh colours. I bore away to ſpeak with her, and found her to be the Antelope of London, commanded by captain Hammond, and bound for the bay of Bengal in the ſervice of the New-Eaſt-India company. There were many paſſengers on board, going to ſettle there under Sir Edward Littleton, who was going chief thither; I went on board, and was known by Sir Edward and Mr. Hedges, and kindly received and treated by them and the commander; who had been afraid of us before, tho' I had ſent one of my officers on board. They had been in at the Cape, and came from thence the day before, having ſtocked themſelves with refreſhments. They told me that they were by reckoning, ſixty miles to the weſt of the Cape. While I was on board them, a fine ſmall weſterly wind ſprang up, therefore I ſhortned my ſtay with them, becauſe I did not deſign to go into the Cape. When I took leave I was preſented with half a mutton, twelve cabbages, twelve pumpions, ſix pounds of butter, ſix couple of ſtockfiſh, and a quantity of parſnips, ſending them ſome oatmeal, which they wanted.

From my firſt ſetting out from England, I did not deſign to touch at the Cape, and that was one reaſon why I touched at Brazil, that there I might refreſh my men, and prepare them for a long run to New Holland. We had not yet ſeen the land, but about two in the afternoon we ſaw the Cape-land bearing eaſt, at above ſixteen leagues diſtance; and captain Hammond being alſo bound to double the Cape, we jog'd on together this afternoon and the next day, and had ſeveral fair ſights of it.

To proceed, having ſtill a weſterly wind, I jog'd on in company with the Antelope, till Sunday June the fourth at four in the afternoon, when we parted, they ſteering away for the Eaſt Indies, and I keeping an E. S. E. Courſe, the better to make my way for New Holland; for tho' New Holland lies north-eaſterly from the Cape, yet all ſhips bound towards that coaſt, or the ſtreights of Sunda, ought to keep for a while in the ſame parallel, or in a latitude between 35 and 40, at leaſt a little to the S. of the eaſt, that they may continue in a variable winds way; and not venture too ſoon to ſtand ſo far to the north, as to be within the verge of the trade wind, which will put them by their eaſterly courſe. The wind increaſed upon us; but we had yet ſight of the Antelope, and of the land too, till Tueſday the ſixth of June; and then we ſaw alſo by us an innumerable company of fowls of divers ſorts; ſo that we looked about to ſee if there were not another dead whale, but ſaw none.

The night before, the ſun ſet in a black cloud, which appeared juſt like land, and the clouds above it were gilded of a dark red colour. And on the Tueſday, as the ſun drew near the horizon, the clouds were gilded very prettily to the eye, tho' at the ſame time my mind dreaded the conſequence of it. When the ſun was now not above two degrees high, it entered into a dark ſmoaky-cloud that lay parallel with the horizon, from whence preſently ſeemed to iſſue many duſky blackiſh beams. The ſky was at this time covered with ſmall hard clouds (as we call ſuch as lie ſcattering about, not likely to rain) very thick one by another; and ſuch of them as lay next to the bank of clouds at the horizon, were of a pure gold colour to three or four degrees high above the bank: from theſe to about ten degrees high they were redder, and very bright, above them they were darker colour ſtill,

to

to about ſixty or ſeventy degrees high, where the clouds began to be of their common colour. I took the more particular notice of all this, becauſe I have generally obſerved ſuch coloured clouds to appear before an approaching ſtorm, and this being winter here, and the time for bad weather, I expected and provided for a violent blaſt of wind, by riffing our topſails, and giving a ſtrict charge to my officers to hand them or take them in, if the wind ſhould grow ſtronger. The wind was now at W. N. W. a very briſk gale. About twelve o'clock at night we had a pale whitiſh glare in the N. W. which was another ſign, and intimated the ſtorm to be near at hand, and the wind increaſing upon it, we preſently handed our topſails, furled the mainſail, and went away only with our foreſail. Before two in the morning it came on very fierce, and we kept right before the wind and ſea, the wind ſtill increaſing; but the ſhip was very governable, and ſteered incomparably well. At eight in the morning we ſettled our fore-yard, lowering it four or five feet, and ran very ſwiftly; eſpecially when the ſqualls of rain or hail, from a black cloud came over head, for then it blew exceſſive hard. Theſe, tho' they did not laſt long, yet came very thick and faſt one after another. The ſea alſo ran very high; but running ſo violently before wind and ſea, we ſhipped little or no water, tho' a little waſhed into our upper deck-ports, and with it a ſcuttle or cuttle-fiſh was caſt upon the carriage of a gun.

The wind blew extraordinary hard all Wedneſday the 7th of June, but abated of its fierceneſs befote night; yet it continued a briſk gale till about the 16th, and ſtill a moderate one till the 19th day; by which time we had run about ſix hundred leagues: for the moſt part of which time the wind was in ſome point of the weſt, viz. from the W. N. W.

to the S. by W. It blew hardeſt when at W. or between the W. and S. W. but after it veered more ſoutherly the foul weather broke up: this I obſerved at other times alſo in theſe ſeas, that when the ſtorms at weſt veered to the ſouthward they grew leſs; and that when the wind came to the E. of the S. we had ſtill ſmaller gales, calms, and fair weather. As for the weſterly winds on that ſide the Cape, we like them never the worſe for being violent, for they drive us the faſter to the eaſtward; and are therefore the only winds coveted by thoſe who ſail towards ſuch parts of the Eaſt-Indies, as lie ſouth of the equator; as Timor, Java, and Sumatra, and by the ſhips bound for China, or any other that paſs thro' the ſtreights of Sunda. Thoſe ſhips having once paſt the Cape, keep commonly pretty far ſoutherly, on purpoſe to meet with theſe weſt winds, which in the winter ſeaſon of theſe climates they ſoon meet with; for then the winds are generally weſterly at the Cape, and eſpecially to the ſouthward of it: but in the ſummer months they get to the ſouthward of 40 d. uſually e'er they meet with the weſterly winds. I was not at this time in a higher lat. than 36 d. 40 min. and oftentimes more northerly, altering my latitude often as winds and weather requir'd; for in ſuch long runs 'tis beſt to ſhape ones courſe according to the winds. And if in ſteering to the eaſt, we ſhould be obliged to bear a little to the N. or S. of it, 'tis no great matter; for 'tis but ſailing two or three points from the wind, when it is either northerly or ſoutherly; and this not only eaſes the ſhip from ſtraining, but ſhortens the way more than if a ſhip was kept cloſe on a wind, as ſome men are fond of doing.

The 19th of June we were in lat. 34 d. 17 min. S. and long. from the Cape 39 d. 24 min. E. and had ſmall gales and calms. The winds were at N. E.

E. by E. and continued in ſome part of the E. till the 27th day. When it having been ſometime at N. N. E. it came about at N. and then to the W. of the N. and continued in the weſt-board (between the N. N. W. and S. S. W.) till the 4th of July; in which time we ran ſeven hundred and eighty two miles, then the winds came about again to the eaſt, we reckoning ourſelves to be in a meridian 1100 L. eaſt of the Cape, and having fair weather ſounded, but had no ground.

We met with little of remark in this voyage, beſides being accompanied with fowls all the way, eſpecially pintado-birds, and ſeeing now and then a whale; but as we drew near the coaſt of New Holland, we ſaw frequently three or four whales together. When we were about ninety leagues from the land we began to ſee ſea-weeds, all of one ſort, and as we drew near the ſhore we ſaw them more frequently. At about thirty leagues diſtance we began to ſee ſome ſcuttle-bones floating on the water, and drawing ſtill nearer the land we ſaw greater quantities of them.

July the 25th being in lat. 26 deg. 14 min. S. and longitude eaſt from the Cape of Good Hope 85 degrees 52 minutes, we ſaw a large gar-fiſh leap four times by us, which ſeemed to be as big as a porpoſe. It was now very fair weather, and the ſea was full of a ſort of very ſmall graſs or moſs, which as it floated in the water ſeemed to have been ſome ſpawn of fiſh, and there was among it ſome ſmall fry. The next day the ſea was full of ſmall round things like pearl, ſome as big as white peaſe, they were very clear and tranſparent, and upon cruſhing any of them a drop of water would come forth; the ſkin that contained the water was ſo thin that it was but juſt deſcernable. Some weeds ſwam by us, ſo that we did not doubt but we ſhould

quickly ſee land. On the 27th alſo, ſome weeds ſwam by us, and the birds that had flown along with us all the way almoſt from Brazil, now left us, except only two or three ſhear-waters. On the 28th we ſaw many weeds ſwim by us, and ſome whales, blowing. On the 29th we had dark cloudy weather, with much thunder, lightning, and violent rains in the morning; but in the evening it grew fair. We ſaw this day a ſcuttle-bone ſwim by us, and ſome of our young men a ſeal, as it ſhould ſeem by their deſcription of its head. I ſaw alſo ſome bonetas, and ſome ſkipjacks, a fiſh about eight inches long, broad and ſizable, not much unlike a roach, which our ſeamen call ſo from their leaping about.

The 30th of July, being ſtill nearer the land, we ſaw abundance of ſcuttle-bones and ſea-weed, more tokens that we were not far from it, and ſaw alſo a ſort of fowls the like of which we had not ſeen in the whole voyage, all the other fowls having now left us. Theſe were as big as lapwings, with red ſharp bills, long wings, their tails long and fork'd like ſwallows, and they flew flapping their wings like lapwings. In the afternoon we met with a ripling like a tide or current, or the water of ſome ſhoal or overfal, but were paſt it before we could ſound. The birds laſt mentioned and this were further ſigns of land. In the evening we had fair weather, and a ſmall gale at weſt. At nine o'clock we ſounded again, but had no ground.

We kept on ſtill to the eaſtward, with an eaſy ſail, looking out ſharp, for by the many ſigns we had, I did expect that we were near the land. At twelve o'clock in the night I ſounded, and had forty-five fathom, courſe ſand and ſmall white ſhells. I preſently clapt on a wind and ſtood to the ſouth, with the wind at weſt, becauſe I thought we were

to

to the ſouth of a ſhoal, called the Abrohles (an appellative name for ſhoals, as it ſeems to me) which in a draft I had of that coaſt is laid down in 27 d. 28 m. lat. ſtretching about ſeven leagues into the ſea. I was the day before in 27 d. 38 m. by reckoning. And afterwards ſteering E. by S. purpoſely to avoid it, I thought I muſt have been to the ſouth of it, but ſounding again, at one o'clock in the morning, Auguſt the firſt, we had but twenty-five fathom, coral-rocks, and ſo found the ſhoal was to the ſouth of us. We preſently tackt again, and ſtood to the north, and then ſoon deepned our water, for at two in the morning we had twenty-ſix fathom coral ſtill, at three, we had twenty-eight coral-ground, at four we had thirty fathom, courſe ſand, with ſome coral, at five we had forty-five fathom, courſe ſand and ſhells, being now off the ſhoal, as appeared by the ſand and ſhells, and by having left the coral. By all this I knew we had fallen in to the north of the ſhoal, and that it was laid down wrong in my ſea-chart; for I found it lie in about 27 d. lat. and by our run in the next day, I found that the outward edge of it, which I ſounded on, lies ſixteen leagues off ſhore. When it was day we ſteered in E. N. E. with a fine briſk gale, but did not ſee the land till nine in the morning, when we ſaw it from our topmaſt-head, and were diſtant from it about ten leagues; having then forty fathom water and clean ſand. About three hours after we ſaw it on our quarter-deck, being by judgment about ſix leagues off: and we had then forty fathom, clean ſand. As we ran in, this day and the next, we took ſeveral ſights of it, at different bearings and diſtances.

This morning, Auguſt the firſt, as we were ſtanding in, we ſaw ſeveral large ſea fowls, like our gannets on the coaſt of England, flying three or four

together; and a ſort of white ſea mews, but black about the eyes, and with forked tails. We ſtrove to run in near the ſhore to ſeek for a harbour to refreſh us after our tedious voyage; having made one continued ſtretch from Brazil hither of about 114 d. deſigning from hence alſo to begin the diſcovery I had a mind to make on N. Holland and N. Guinea. The land was low, and appeared even, and as we drew nearer to it, it made with ſome red and ſome white cliffs; theſe laſt in lat. 26. 10. S. where you will find fifty four fathom, within four miles of the ſhore.

About the lat. of 26 d. S. we ſaw an opening, and ran in, hoping to find an harbour there: but when we came to its mouth, which was about two leagues wide, we ſaw rocks and foul ground within, and therefore ſtood out again: there we had twenty fathom water within two miles of the ſhore. The land every where appeared pretty low, flat and even, but with ſteep cliffs to the ſea; and when we came near it there were no trees, ſhrubs or graſs to be ſeen. The ſoundings in the lat. of 26 d. S. from about eight or nine leagues off till you come within a league of the ſhore, are generally about forty fathom; differing but little, ſeldom above three or four fathom. But the lead brings up very different ſorts of ſand, ſome coarſe, ſome fine; and of ſeveral colours, as yellow, white, grey, brown, bluiſh and rediſh.

When I ſaw there was no harbour here, nor good anchoring, I ſtood off to ſea again, in the evening of the ſecond of Auguſt, fearing a ſtorm on a lee-ſhore, in a place where there was no ſhelter, and deſiring at leaſt to have ſea-room: for the clouds began to grow thick in the weſtern-board, and the wind was already there, and began to blow freſh almoſt upon the ſhore; which at this place lies a-

long

long N. N. W. and S. S. E. By nine o'clock at night we had got a pretty good offing, but the wind ſtill encreaſing, I took in my main-top-ſail, being able to carry no more ſail than two courſes and the mizen. At two in the morning, Auguſt third, it blew very hard, and the ſea was much raiſed; ſo that I furled all my ſails but my main-ſail. Tho' the wind blew ſo hard, we had yet pretty clear weather till noon: but then the whole ſky was blackened with thick clouds, and we had ſome rain, which would laſt a quarter of an hour at a time, and then it would blow very fierce while the ſqualls of rain were over our heads; but as ſoon as they were gone the wind was much abated, the ſtreſs of the ſtorm being over. We ſounded ſeveral times, but had no ground till eight o'clock Aug. the 4th in the evening, and then had ſixty fathom water, coral ground. At ten we had fifty ſix fathom, fine ſand. At twelve we had fifty five fathom, fine ſand, of a pale, bluiſh colour. It was now pretty moderate weather, yet I made no ſail till morning; but then, the wind veering about to the S. W. I made ſail and ſtood to the north; and at eleven o'clock the next day, Aug. five, we ſaw land again, at about ten leagues diſtance. This noon we were in lat. 25 d. 30 min. and in the afternoon our cook died, an old man, who had been ſick a great while, being infirm before we came out of England.

The 6th of Auguſt in the morning we ſaw an opening in the land, and ran into it and anchored in ſeven and a half fathom water, two miles from the ſhore, clean ſand. It was ſomewhat difficult to get in here, by reaſon of many ſhoals we met with; but I ſent my boat ſounding before me. The mouth of this ſound, which I called Shark's Bay, lies in about 25 d. S. lat. and our reckoning made its longitude from the Cape of Good Hope to be about

bout 87 degrees; which is leſs by one hundred and ninety five leagues than is uſually laid down in our common draughts, if our reckoning was right, and our glaſſes did not deceive us. As ſoon as I came to anchor in this bay, I ſent my boat aſhore to ſeek for freſh water; but in the evening my men returned, having found none. The next morning I went aſhore myſelf, carrying pick-axes and ſhovels with me, to dig for water, and axes to cut wood. We tried in ſeveral places for water, but finding none after ſeveral trials, nor in ſeveral miles compaſs, we left any farther ſearch for it, and ſpending the reſt of the day in cutting wood, we went on board at night.

The land is of an indifferent height, ſo that it may be ſeen nine or ten leagues off. It appears at a diſtance very even; but as you come nearer you find there are many gentle riſings, tho' none ſteep nor high. 'Tis all a ſteep ſhore againſt the open ſea; but in this bay or ſound we were now in, the land is low by the ſea ſide, riſing gradually within the land. The mould is ſand by the ſea ſide, producing a large ſort of ſampier, which bears a white flower. Farther in, the mould is rediſh, a ſort of ſand which produces ſome graſs, plants, and ſhrubs. The graſs grows in great tufts, as big as a buſhel, here and there a tuft; being intermix'd with much heath, of the ſame kind which grows on our commons in England. Of trees or ſhrubs here are divers ſorts; but none above ten feet high; their bodies about three feet about, and five or ſix feet high before you come the branches, which are buſhy and compoſed of ſmall twigs there ſpreading abroad, tho' thick ſet, and full of leaves, which were moſtly long and narrow. The colour of theſe leaves was on one ſide whitiſh, and on the other green; and the bark of the trees was generally of the ſame

colour

colour with the leaves, of a pale green. Some of theſe trees were ſweet-ſcented, and rediſh within the bark, like ſaſſafras, but redder. Moſt of the trees and ſhrubs had at this time either bloſſoms or berries on them. The bloſſoms of the different ſorts of trees were of ſeveral colours, as red, white, yellow, &c. but moſtly blue; and theſe generally ſmelled very ſweet and fragrant, as did ſome alſo of the reſt. There were alſo beſides ſome plants, herbs, and tall flowers, ſome very ſmall flowers growing on the ground, that were ſweet and beautiful, and for the moſt part unlike any I had ſeen elſewhere.

There were but few land fowls: we ſaw none but eagles, of the larger ſorts of birds, but five or ſix ſorts of ſmall birds. The largeſt ſort of theſe were not bigger than larks; ſome no bigger than wrens, all ſinging with variety of fine ſhrill notes: we ſaw ſome of their neſts with young ones in them. The water-fowls are ducks, (which had young ones now, this being the beginning of the ſpring in theſe parts) curlews, galdens, crab-catchers, cormorants, gulls, pelicans, and ſome water-fowl, ſuch as I have not ſeen any where beſides.

The land-animals that we ſaw here were only a ſort of racoons, different from thoſe of the Weſt-Indies, chiefly as to their legs; for theſe have very ſhort fore legs, but go jumping upon them as the others do, and like them are very good meat) and a ſort of Guanos, of the ſame ſhape and ſize with other guanos, deſcribed (Vol. I. p. 192) but differing from them in three remarkable particulars; for theſe had a larger and uglier head, and had no tail: and at the rump, inſtead of the tail there, they had a ſtump of a tail, which appeared like another head, but not really ſuch, being without mouth or eyes; yet this creature ſeem'd by this means to have a head at each end; and, which may be reckon'd a fourth difference, the legs alſo ſeem'd all four of them

them to be fore-legs, being alike in ſhape and length, and ſeeming by the joints and bending to be made as if they were to go indifferently either head or tail foremoſt. They were ſpeckled black and yellow like toads, and had ſcales or knobs on their backs like thoſe of crocodiles, plated on to the ſkin. They are very ſlow in motion, and when a man comes near them they will ſtand ſtill and hiſs, not endeavouring to get away. Their livers are alſo ſpotted black and yellow; and the body when opened hath a very unſavory ſmell. I did never ſee ſuch ugly creatures any where but here. The guanos I have obſerved to be very good meat, and I have often eaten of them with pleaſure; but tho' I have eaten of ſnakes, crocodiles, and allegators, and many creatures that look frightful enough, and there are but few I ſhould have been afraid to eat if preſſed by hunger, yet I think my ſtomach would ſcarce have ſerved to venture upon theſe New Holland guanos, both the looks and the ſmell of them being ſo offenſive.

The ſea-fiſh that we ſaw here (for here was no river, land or pond of freſh water to be ſeen) are chiefly ſharks. There are abundance of them in this particular ſound, that I therefore gave it the name of Shark's Bay. Here are alſo ſkates, thornbacks, and other fiſh of the ray-kind; (one ſort eſpecially like the ſea-devil) and garfiſh, bonatos, &c. Of ſhell-fiſh we got here muſcles, periwinkles, limpits, oyſters, both of the pearl-kind and alſo eating-oyſters, as well the common ſort as long oyſters, beſides cockles, &c. The ſhore was lined thick with many other ſorts of very ſtrange and beautiful ſhells, for variety of colour and ſhape, moſt finely ſpotted with red, black, or yellow, &c. ſuch as I have not ſeen any where but at this place. I brought a-

way

way a great many of them, but loſt all, except a very few, and thoſe not of the beſt.

There are alſo ſome green turtle weighing about two hundred pounds. Of theſe we caught two which the water ebbing had left behind a ledge of rock, which they could not creep over. Theſe ſerved all my company two days; and they were indifferent ſweet meat. Of the ſharks we caught a great many, which our men eat very favourily. Among them we caught one which was eleven feet long. The ſpace between its eyes was twenty inches, and eighteen inches from one corner of his mouth to the other. Its maw was like a leather ſack, very thick, and ſo tough that a ſharp knife could ſcarce cut it; in which we found the head and bones of a Hippopotomus, the hairy lips of which were ſound and not putrified, and the jaw was alſo firm, out of which we plucked a great many teeth, two of them eight inches long, and as big as man's thumb, ſmall at one end, and a little crooked, the reſt not above half ſo long. The maw was full of jelly which ſtunk extremely; however I ſaved for a while the teeth and the ſharks jaw; the fleſh of it was divided among my men, and they took care that no waſte ſhould be made of it.

It was the 7th of Auguſt when we came into Shark's Bay, in which we anchored at three ſeveral places, and ſtaid at the firſt of them (on the W. ſide of the bay) till the 11th, during which time we ſearched about, as I ſaid, for freſh water, digging wells but to no purpoſe. However, we cut good ſtore of fire-wood at this firſt anchoring-place, and my company were all very well refreſhed here with racooons, turtle, ſhark, and other fiſh, and ſome fowls, ſo that we were now all much briſker than when we came in hither. Yet ſtill I was for

ſtanding

ſtanding farther into the bay, partly becauſe I had a mind to increaſe my ſtock of freſh water, which was begun to be low, and partly for the ſake of diſcovering this part of the coaſt. I was invited to go further, by ſeeing from this anchoring-place all open before me, which I therefore deſigned to ſearch before I left the bay. So on the 11th about noon, I ſteered farther in, with an eaſy ſail, becauſe we had but ſhallow water, we kept therefore good looking out for fear of ſhoals; ſometimes ſhortning, ſometimes deepning the water. About two in the afternoon we ſaw the land a head that makes the ſouth of the bay, and again before night we had ſholdings from that ſhore: and therefore ſhortned ſail and ſtood off and on all night, under two topſails, continually ſounding, having never more than ten fathom, and ſeldom leſs than ſeven. The water deepned and ſholdned ſo very gently, that in heaving the lead five or ſix times we ſhould ſcarce have a foot difference. When we came into ſeven fathom either way, we preſently went about. From this S. part of the bay, we could not ſee the land from whence we came in the afternoon; and this land we found to be an iſland of three or four leagues long, but appearing barren. I did not ſtrive to go nearer it; and the rather becauſe the winds would not permit us to do it without much trouble, and at the openings the water was generally ſhoal. I therefore made no farther attempts in this S. W. and S. part of the bay, but ſteered away to the eaſtward, to ſee if there was any land that way, for as yet we had ſeen none there. On the 12th in the morning we paſſed by the north point of that land, and were confirmed in the perſuaſion of its being an iſland, by ſeeing an opening to the eaſt of it, as we had done to the W. Having fair weather, a ſmall gale and ſmooth water, we ſtood

further on in the bay, to ſee what land was on the eaſt of it. Our ſoundings at firſt were ſeven fathom, which held ſo a great while, but at length it decreaſed to ſix. Then we ſaw the land right a-head, that in the plan makes the eaſt of the bay. We could not come near it with the ſhip, having but ſhoal water; and it being dangerous to lie there, and the land extraordinary low, very unlikely to have freſh water (though it had a few trees on it, ſeemingly mangroves) and much of it probably covered at high-water, I ſtood out again that afternoon, deepning the water, and before night anchored in eight fathom, clean white ſand, about the middle of the bay. The next day we got up our anchor; and that afternoon came to an anchor once more near two iſlands, and a ſhoal of coral rocks that face the bay. Here I ſcrubbed my ſhip; and finding it very improbable that I ſhould get any thing further here, I made the beſt of my way out to ſea again, ſounding all the way: but finding by the ſhallowneſs of the water that there was no going out to ſea to the eaſt of the two iſlands that face the bay, nor between them, I returned to the weſt entrance, and went out by the ſame way I came in, only on the eaſt inſtead of the weſt ſide of the ſmall ſhoal to be ſeen in the plan; in which channel we had ten, twelve, and thirteen fathom water, ſtill deepning upon us till we were out at ſea. The day before we came out I ſent a boat aſhore to the moſt northerly of the two iſlands, which is the leaſt of them, catching many ſmall fiſh in the mean time with hook and line. The boat's crew returning, told me, that the iſle produces nothing but a ſort of green, ſhort, hard, prickly graſs, affording neither wood nor freſh water; and that a ſea broke between the two iſlands, a ſign that the water was ſhallow.

They

They ſaw a large turtle, and many ſkates and thornbacks, but catched none.

It was Auguſt the 14th when I ſail'd out of this bay or ſound, the mouth of which lies, as I ſaid, in 25 d. 5 min. deſigning to coaſt along to the N. E. till I might commodiouſly put in at ſome other part of N. Holland. In paſſing out we ſaw three water ſerpents ſwimming about in the ſea, of a yellow colour, ſpotted with dark brown ſpots. They were each about four feet long, and about the ſize of a man's wriſt, and were the firſt I ſaw on this coaſt, which abounds with ſeveral ſorts of them. We had the winds at our firſt coming out at north, and the land lying north eaſterly. We plied off and on, getting forward but little till the next day: when the wind coming at S. S. W. and S. we began to coaſt it along the ſhore to the northward, keeping at ſix or ſeven leagues off the ſhore; and ſounding often, we had between forty and forty ſix fathom water, brown ſand, with ſome white ſhells. This 15th of Auguſt we were in lat. 24 d. 41 min. On the 16th day at noon we were in 23 d. 22 min. The wind coming at E. by N. we could not keep the ſhore aboard, but were forced to go farther off and loſt ſight of the land. Then ſounding we had no ground with eighty fathom-line; however the wind ſhortly after came about to the ſouthward, and then we ſteered again to the northward, and ſaw many ſmall dolphins and whales, and abundance of ſcuttle ſhells ſwimming on the ſea; and ſome water-ſnakes every day. The 17th we ſaw the land again, and took a ſight of it.

The 18th in the afternoon, being three or four leagues off ſhore, I ſaw a ſhoal point, ſtretching from the land into the ſea, a league or more. The ſea broke high on it; by which I ſaw plainly there was a ſhoal there. I ſtood farther off, and coaſted

along

along ſhore, to about ſeven or eight leagues diſtance: at twelve o'clock at night we ſounded, and had but twenty fathom, hard ſand. By this I found I was upon another ſhoal, and ſo preſently ſteered off W. half an hour, and had then forty fathom. At one in the morning of the 18th day we had eighty five fathom: by two we could find no ground, and then I ventured to ſteer along the ſhore again, due north, which is two points wide of the coaſt (that lies here N. N. E.) for fear of another ſhoal. I would not be too far off from the land, being deſirous to ſearch into it where-ever I ſhould find an opening or any convenience of ſearching about for water, &c. When we were off the ſhoal point I mentioned, where we had but twenty fathom, we had in the night abundance of whales about the ſhip, ſome ahead, others aſtern, and ſome on each ſide, blowing and making a very diſmal noiſe; but when we came out again into deeper water they left us. Indeed the noiſe that they made by blowing and daſhing the ſea with their tails, making it all of a breach and foam, was very dreadful to us, like the breach of the waves in very ſhoal water, or among rocks. The ſhoal theſe whales were upon had depth of water ſufficient, no leſs than twenty fathom as I ſaid; and it lies in lat 22 d. 22 min. The ſhore was generally bold all along: we had met with no ſhoal at ſea ſince the Abrohlo-ſhoal, when we firſt fell on the N. Holland coaſt in the lat. of 28, till yeſterday in the afternoon, and this night. This morning alſo when we expected by the draught we had with us to have been eleven leagues off ſhore, we were but four; ſo that either our draughts were faulty, which yet hitherto and afterwards we found true enough as to the lying of the coaſt, or elſe here was a tide unknown to us that deceived us; tho' we had found very little of any tide on this

coaſt hitherto. As to our winds in the coaſting thus far, we had been within the verge of the general trade (tho' interrupted by the ſtorm I mention'd) from the lat. of 28, when we firſt fell in with the coaſt: and by that time we were in the lat. of 25, we had uſually the regular trade-wind (which is here S. S. E.) when we were at any diſtance from ſhore: but we had often ſea and land breezes, eſpecially when near ſhore, and when in Shark's-bay; and had a particular north weſt wind, or ſtorm, that ſet us in thither. On this 18th of Auguſt we coaſted with a briſk gale of the true trade wind at S. S. E. very fair and clear weather; but haling off in the evening to ſea, were next morning out of ſight of land: and the land now tending away north eaſterly, we being to the northward of it, and the wind alſo ſhrinking from the S. S. E. to the E. S. E. (that is, from the true trade wind to the ſea-breeze, as the land now lay) we could not get in with the land again yet a-while, ſo as to ſee it, tho' we trim'd ſharp and kept cloſe on a wind. We were this 19th day in lat. 21 d. 42 min. The 20th we were in lat. 19 d. 37 m. and kept cloſe on a wind to get ſight of the land again, but could not yet ſee it. We had fair weather, and tho' we were ſo far from the land as to be out of ſight of it, yet we had the ſea and land-breezes. In the night we had the land-breeze at S. S. E. a ſmall gentle gale, which in the morning about ſun-riſing would ſhift about gradually (and withall increaſing in ſtrength) till about noon we ſhould have it at E. S. E. which is the true ſea-breeze here. Then it would blow a briſk gale, ſo that we could ſcarce carry our top-ſails double reefed; and it would continue this till three in the afternoon, when it would decreaſe again. The weather was fair all the while, not a cloud to be ſeen; but very hazy, eſpecially near the horizon.

horizon. We ſounded ſeveral times this 20th day, and at firſt had no ground; but had afterwards from 52 to 45 fathom, coarſe brown ſand, mixed with ſmall brown and white ſtones, with dints beſides in the tallow.

The 21ſt day alſo we had ſmall land-breezes in the night, and ſea-breezes in the day, and as we ſaw ſome ſea-ſnakes every day, ſo this day we ſaw a great many, of two different ſorts or ſhapes. One ſort was yellow, and about the bigneſs of a man's wriſt, about four feet long, having a flat tail about four fingers broad. The other ſort was much ſmaller and ſhorter, round and ſpotted black and yellow. This day we ſounded ſeveral times, and had forty-five fathom ſand. We did not make the land till noon, and then ſaw it firſt from our topmaſt-head. It bore S. E. by E. about nine leagues diſtance, and appeared like a cape or head of land. The ſea-breeze this day was not ſo ſtrong as the day before, and it veered out more, ſo that we had a fair wind to run in with to the ſhore, and at ſunſet anchored in twenty fathom, clean ſand, about five leagues from the bluff point, which was not a cape (as it appeared at a great diſtance) but the eaſtermoſt end of an iſland, about five or ſix leagues in length, and one in breadth. There were three or four rocky iſlands about a league from us between us and the bluff point, and we ſaw many other iſlands both to the eaſt and weſt of it, as far as we could ſee either way from our topmaſt-head, and all within them to the ſouth, there was nothing but iſlands of a pretty height, that may be ſeen eight or nine leagues off. By what we ſaw of them they muſt have been a range of iſlands of about twenty leagues in length, ſtretching from E. N. E. to W. S. W. and for ought I know, as far as to thoſe of Sharks-bay, and to a conſiderable breadth alſo, (for we could ſee nine or ten leagues in a-

mong them) towards the continent or main land of New Holland, if there be any ſuch thing hereabouts; and by the great tides I met with a while afterwards, more to the north eaſt, I had a ſtrong ſuſpicion that here might be a kind of Archipelago of iſlands, and a paſſage poſſibly to the ſouth of New Holland and New Guinea into the great South Sea eaſtward; which I had thoughts alſo of attempting in my return from New Guinea (had circumſtances permitted) and told my officers ſo; but I would not attempt it at this time, becauſe we wanted water, and could not depend upon finding it there. This place is in the lat. of 20 d. 21 m. but in the draft that I had of this coaſt, which was Taſman's, it was laid down in 19 d. 50 m. and the ſhore is laid down as all along joining in one body or continent, with ſome openings appearing like rivers, and not like iſlands, as really they are. This place therefore lies more northerly by 40 min. than is laid down in Mr. Taſman's draft; and beſides its being made a firm, continued land, only with ſome openings like the mouths of rivers, I found the ſoundings alſo different from what the pricked line of his courſe ſhews them, and generally ſhallower than he makes them; which inclines me to think that he came not ſo near the ſhore as his line ſhews, and ſo had deeper ſoundings, and could not ſo well diſtinguiſh the iſlands. His meridian or difference of longitude from Sharks-bay agrees well enough with my account, which is two hundred and thirty two leagues tho' we differ in latitude. And to confirm my conjecture that the line of his courſe is made too near the ſhore, at leaſt not far to the eaſt of this place, the water is there ſo ſhallow that he could not come there ſo near.

But to proceed, in the night we had a ſmall land-breeze, and in the morning I weighed anchor, deſigning

ſigning to run in among the iſlands, for they had large channels between them, of a league wide at leaſt, and ſome two or three leagues wide. I ſent in my boat before to ſound, and if they found ſhoal water to return again; but if they found water enough, to go aſhore on one of the iſlands, and ſtay till the ſhip came in; where they might in the mean time ſearch for water. So we followed after with the ſhip, ſounding as we went in, and had twenty fathom, till within two leagues of the bluff-head, and then we had ſhoal water, and very uncertain ſoundings; yet we ran in ſtill with an eaſy ſail, ſounding and looking out well, for this was dangerous work. When we came abreaſt of the bluff-head, and about two mile from it we had ſeven fathom; then we edged away from it, but had no more water, and running in a little farther, we had but four fathom; ſo we anchored immediately; and yet when we had veered out a third of a cable we had ſeven fathom water again, ſo uncertain was the water. My boat came immediately on board, and told me that the iſland was very rocky and dry, and they had little hopes of finding water there. I ſent them to ſound, and told them, if they found a channel of eight or ten fathom water, to keep on, and we would follow with the ſhip. We were now about four leagues within the outer ſmall rocky iſlands, but ſtill could ſee nothing but iſlands within us, ſome five or ſix leagues long, others not above a mile round. The large iſlands were pretty high, but all appeared dry, and moſtly rocky and barren. The rocks looked of a ruſty yellow colour, and therefore diſpaired of getting water on any of them, but was in ſome hopes of finding a channel to run in beyond all theſe iſlands, could I have ſpent time here, and either get to the main of New Holland, or find out ſome other iſlands that

might afford us water and other refreſhments; beſides, that among ſo many iſlands, we might have found ſome ſort of rich mineral, or ambergreeſe, it being a good latitude for both theſe. But we had not ſailed above a league farther before our water grew ſhoaler again, and then we anchored in ſix fathom hard ſand.

We were now on the inner ſide of the iſland, on whoſe outſide is the bluff-point. We rode a league from the iſland, and I preſently went aſhore, and carried ſhovels to dig for water, but found none. There grew here two or three ſorts of ſhrubs, one juſt like roſemary, and therefore I called this Roſemary iſland. It grew in great plenty here, but had no ſmell. Some of the other ſhrubs had blue and yellow flowers, and we found two ſorts of grain like beans; the one grew on buſhes, the other on a ſort of a creeping vine that runs along on the ground, having very thick broad leaves, and the bloſſom like a bean bloſſom, but much larger, and of a deep red colour, looking very beautiful. We ſaw here ſome cormorants, gulls, crabcatchers, &c. a few ſmall land birds, and a ſort of white parrots, which flew a great many together. We found ſome ſhell-fiſh, viz. limpits, perriwinkles, and abundance of ſmall oyſters growing on the rocks, which were very ſweet. In the ſea we ſaw ſome green turtle, a pretty many ſharks, and abundance of water-ſnakes of ſeveral ſorts and ſizes. The ſtones were all of ruſty colour, and ponderous.

We ſaw a ſmoak on an iſland three or four leagues off; and here alſo the buſhes had been burned, but we found no other ſign of inhabitants: 'twas probable that on the iſland where the ſmoke was there were inhabitants, and freſh water for them. In the evening I went on board, and conſulted with my officers whether it was beſt to ſend thither, or ſearch among

among any other of theſe iſlands with my boat; or elſe go from hence, and coaſt along ſhore with the ſhip, till we could find ſome better place than this to ride in, where was ſhoal water, and lay expoſed to winds and tides. They all agreed to go from hence; ſo I gave orders to weigh in the morning as ſoon as it ſhould be light, and to get out with the land-breeze.

Accordingly, Aug. the 23d at five in the morning we ran out, and had a pretty freſh land-breeze at S. S. E. By eight o'clock we got out: and very ſeaſonably, for before nine the ſea-breeze came on us very ſtrong, and increaſing, we took in our top-ſails, and ſtood off under two courſes and a mizen, this being as much ſail as we could carry. The ſky was clear, there being not one cloud to be ſeen, but the horizon appeared very hazy, and the ſun at ſetting the night before, and this morning at riſing, appeared very red. The wind continued very ſtrong till twelve, and then it abated: I have ſeldom met with a ſtronger breeze. Theſe ſtrong ſea-breezes laſted thus in their turns three or four days. They ſprung up with the ſun-riſe: by nine o'clock they were very ſtrong, and ſo continued till noon, when they abated; and by ſun-ſet there was little wind, or a calm till the land breezes came; which we ſhould certainly have about one or two in the morning. The land-breezes were between the S. S. W. and S. S. E. The ſea-breezes between the E. N. E. and N. N. E. In the night while calm, we fiſh'd with hook and line, and catched plenty of fiſh, viz. ſnappers, breams, old-wives, and dog-fiſh. When theſe laſt came we ſeldom catched any others; for if they did not drive away the other fiſh, yet they would be ſure to keep them from taking our hooks, for they would firſt have them themſelves, biting very greedily. We

catched

catched alſo a monk-fiſh, of which I brought home the picture.

On the 25th of Auguſt, ſtill coaſted along ſhore, that we might the better ſee an opening; kept ſounding, and had about twenty fathom clean ſand. The 26th day, being about four leagues off ſhore, the water began gradually to ſhoalden from twenty to fourteen fathom. I was edging in a little towards the land, thinking to have anchored: but preſently after the water decreaſed almoſt at once, till we had but five fathom. I durſt therefore venture no farther, but ſteered out the ſame way that I came in, and in ſhort time had ten fathom (being then about four leagues and a half from the ſhore) and even ſoundings. I ſteered away E. N. E. coaſting along as the land lies. This day the ſea-breezes began to be very moderate again, and we made the beſt of our way along ſhore, only in the night edging off a little for fear of ſhoals. Ever ſince we left Shark's-bay we had had fair clear weather, and ſo for a great while ſtill.

The 27th day, we had twenty fathom water all night, yet we could not ſee land till one in the afternoon from our topmaſt-head. By three we could juſt diſcern land from our quarter-deck: we had then ſixteen fathom. The wind was at north, and we ſteered E. by N. which is but one point in on the land, yet we decreaſed our water very faſt; for at four we had but nine fathom; the next caſt but ſeven, which frightned us; and inſtantly tack'd and ſtood off: but in a ſhort time the wind coming at N. W. and W. N. W. we tack'd again, and ſteered N. N. E. and then deepned our water again, and had all night from fifteen to twenty fathom.

The 28th day we had between twenty and forty fathom. We ſaw no land this day, but ſaw a great many ſnakes, and ſome whales. We ſaw alſo ſome boobies,

boobies, and noddy-birds; and in the night catched one of theſe laſt. It was of another colour and ſhape than any I had ſeen before. It had a ſmall long bill, as all of them have, flat feet like duck's feet; its tail forked like a ſwallow, but longer and broader, the fork deeper than that of the ſwallow, and very long wings: the top of the head was coal-black, having alſo ſmall black ſtreaks round about and cloſe to the eyes; and round theſe ſtreaks on each ſide, a pretty broad white circle. The breaſt, belly, and under part of the wings of this noddy were white; and the back and upper part of its wings of a faint black or ſmoak colour.

Noddies are ſeen in moſt places between the tropicks, as well in the Eaſt Indies, and on the coaſt of Brazil, as in the Weſt Indies. They reſt aſhore at nights, and therefore are never ſeen far at ſea, not above twenty or thirty leagues, unleſs driven off in a ſtorm. When they come about a ſhip they commonly perch in the night, and will ſit till they are taken by the ſeamen. They build on cliffs againſt the ſea, or rocks, as I have ſaid V. I. p. 188.

The 30th day being in lat. 18 d. 21 min. we made the land again, and ſaw many great ſmoaks near the ſhore; and having fair weather and moderate breezes, I ſteered in towards it. At four in the afternoon I anchored in eight fathom water, clear ſand, about three leagues and a half from the ſhore. I preſently ſent our boat to ſound nearer in, and they found ten fathom about a mile nearer in; and from thence ſtill nearer the water decreaſed gradually to nine, eight, ſeven, and at two miles diſtance to ſix fathom. This evening we ſaw an eclipſe of the moon, but it was abating before the moon appeared to us; for the horizon was very hazy, ſo that we could not ſee the moon till ſhe had been half an hour above the horizon: and at two hours,

hours, 22 minutes after ſun-ſet, by the reckoning of our glaſſes, the eclipſe was quite gone, which was not of many digits. The moon's center was then 33 d. 40 min. high.

The 31ſt of Auguſt betimes in the morning I went aſhore with ten or eleven men to ſearch for water. We went armed with muſkets and cutlaſſes for our defence, expecting to ſee people there; and carried alſo ſhovels and pick-axes to dig wells. When we came near the ſhore we ſaw three tall black naked men on the ſandy bay ahead of us; but as we row'd in they went away. When we landed I ſent two men in the boat to lie a little from the ſhore at an anchor, to prevent being ſeized, while the reſt of us went after the three black men, who were got on the top of a ſmall hill about a quarter of a mile from us, with eight or nine more in their company. They ſeeing us coming, ran away. When we came on the top of the hill where they firſt ſtood, we ſaw a plain ſavannah, about half a mile from us, further in from the ſea. There were ſeveral things like hay-cocks, ſtanding in the ſavannah; which at a diſtance we thought were houſes, looking juſt like the Hottentot's houſes at the Cape of Good Hope: but we found them to be ſo many rocks. We ſearched about theſe for water, but could find none, nor any houſes, nor people, for they were all gone. We then return'd again to the place we had landed at, and dug there for water.

While we were at work there came nine or ten of the natives to a ſmall hill a little way from us, and made a great noiſe. At laſt one of them came towards us, and the reſt followed at a diſtance. I went out to meet him, and came within fifty yards of him, making to him all the ſigns of peace and friendſhip I could; but then he ran away, neither would

would they any of them ſtay for us to come near them; for we tried two or three times. At laſt I took two men men with me, and went in the afternoon along by the ſea-ſide, purpoſely to catch one of them, if I could, of whom I might learn where they got their freſh water. There were ten or eleven of the natives at a little diſtance, who ſeeing three of us go away from the reſt of our men, followed us. I thought they would follow: but there being for a while a ſand-bank between us and them, that they could not then ſee us, we made a halt, and hid ourſelves in a bending of the ſand-bank. They knew we muſt be thereabouts, and being three or four times our number, thought to ſeize us. So they diſperſed themſelves, ſome going to the ſea-ſhore, and others beating about the ſand-hills. We knew by the rencounter we had had with them in the morning that we could eaſily out-run them: ſo a nimble young man that was with me, ſeeing ſome of them near, ran towards them; and they for ſome time, ran away before him. But he ſoon overtaking them, they faced about and fought him. He had a cutlaſs, and they had wooden lances, with which, being many of them, they were too hard for him. When he firſt ran towards them I chaſed two more that were by the ſhore: but fearing how it might be with my young man, I turned back quickly, and went up to the top of a ſand-hill, whence I ſaw him near me, cloſely engaged with them. Upon their ſeeing me, one of them threw a lance at me, that narrowly miſſed me. I diſcharged my gun to ſcare them, but took care not to ſhoot any of them; till finding the young man in much danger from them, and myſelf in ſome; and that tho' the gun had a little frightned them at firſt, yet they had ſoon learn'd to deſpiſe it, toſſing up their heads, and crying pooh, pooh, pooh,

and

and came on afreſh with a great noiſe, I thought it high time to charge again, and ſhoot one of them, which I did. The reſt, ſeeing him fall, made another ſtand; and my young man took the opportunity to diſengage himſelf, and come off to me, my other man alſo was with me, who had done nothing all this while, having come out unarmed; and I returned back with my men, deſigning to attempt the natives no further, and very ſorry for what had happened already. They took up their wounded companion: and my young man, who had been ſtruck thro' the cheek by one of their lances, was afraid it had been poiſoned; but I did not think that likely. His wound was very painful to him, being made with a blunt weapon; but he ſoon recovered of it.

Among the N. Hollanders, whom we thus engaged, there was one who by his appearance and carriage, as well in the morning as this afternoon, ſeemed to be the chief of them, and a kind of prince or captain among them. He was a young, briſk, man, not very tall, nor ſo perſonable as ſome of the reſt, tho' more active and courageous. He was painted, which none of the reſt were at all, with a circle of white paſte or pigment (a ſort of lime, as we thought) about his eyes, and a white ſtreak down his noſe from his forehead to the tip of it. And his breaſt and ſome part of his arms were alſo made white with the ſame paint; not for beauty or ornament, one would think, but as ſome wild Indian warriors are ſaid to do, he ſeem'd thereby to deſign the looking more terrible: this his painting added very much to his natural deformity, for they had all of them the moſt unpleaſant looks and the worſt features of any people that ever I ſaw, tho' I have ſeen great variety of ſavages. Theſe N. Hollanders were probably the ſame ſort of people

ple as thoſe I met with on this coaſt in my voyage round the world (Vol. II. p. 135, &c.) for the place I then touched at was not above forty or fifty leagues to the N. E. of this; and theſe were much the ſame blinking creatures (here being alſo abundance of the ſame kind of fleſh-flies teizing them) and with the ſame black ſkins, and hair frizled, tall and thin, &c. as thoſe were; but we had not the opportunity to ſee whether theſe, as the former, wanted two of their fore teeth.

We ſaw a great many places where they had made fires; and where there were commonly three or four boughs ſtuck up to windward of them; for the wind (which is the ſea-breeze) in the day time blows always one way with them; and the land-breeze is but ſmall. By their fire-places we always found great heaps of fiſh-ſhells, of ſeveral ſorts; and tis probable that theſe poor creatures here lived chiefly on the ſhell-fiſh, as thoſe I before deſcribed did on ſmall fiſh, which they catched in wires or holes in the ſand at low-water. Theſe gathered their ſhell-fiſh on the rocks at low-water; but had no wires (that I ſaw) whereby to get any other ſorts of fiſh: as among the former I ſaw not any heaps of ſhells as here, though I know they alſo gathered ſome ſhell-fiſh. The lances alſo of thoſe were ſuch as theſe had; however they being upon an iſland, with their women and children, and all in our power, they did not there uſe them againſt us, as here on the continent, where we ſaw none but ſome of the men under a chief or head, who come out purpoſely to obſerve us. We ſaw no houſes at either place; and I believe they have none, ſince the former people on the iſland had none, tho' they had all their families with them.

Upon returning to my men I ſaw, that tho' they had dug eight or nine feet deep, yet found no water.

ter. So I returned on board that evening, and the next day, being Sept. the 1ſt, I ſent my boatſwain aſhore to dig deeper, and ſent the ſain with him to catch fiſh. While I ſtaid on board I obſerved the flowing of the tide, which runs very ſwift here, ſo that our nun-buoy would not bear above the water to be ſeen. It flows here (as on that part of New-Holland I deſcribed formerly, about five fathom: and here the flood runs S. E. by S. till the laſt quarter; then it ſets right in towards the ſhore (which lies here S. S. W. and N. N. E. and the ebb runs north weſt by north. When the tides ſlackned, we fiſh'd with hook and line, as we had already done in ſeveral places on this coaſt; on which in this voyage hitherto, we had found but little tides: but by the height and ſtrength, and courſe of them hereabouts, it ſhould ſeem that if there be ſuch a paſſage or ſtreight going thro' eaſtward to the Great South Sea, as I ſaid one might ſuſpect, one would expect to find the mouth of it ſomewhere between this place and Roſemary iſland, which was the part of N. Holland I come laſt from.

Next morning my men came on board and brought a rundlet of brackiſh water which they got out of another well that they dug in a place a mile off, and about half as far from the ſhore; but this water was not fit to drink. However we all concluded that it would ſerve to boil our oatmeal, for burgoo, whereby they might ſave the remains of our other water for drinking, till we could get more; and accordingly the next day we brought on board four hogſheads of it: but while we were at work about the well we were ſadly peſtered with the flies, which were more troubleſome to us than then ſun, tho' it ſhone clear and ſtrong upon us all the while, very hot. All this while we ſaw no more of the natives, but ſaw ſome ſmoaks of their fires at two or three miles diſtance.

The

The land hereabouts was much like that part of New Holland that I formerly deſcribed (Vol. II. p. 134.) 'tis low, but ſeemingly barricadoed with a long chain of ſand-hills to the ſea, that lets nothing be ſeen of what is farther within land. At high water the tides riſing ſo high as they do, the coaſt ſhews very low; but when it is low water it ſeems to be of an indifferent height. At low water-mark the ſhore is all rocky, ſo that then there is no landing with a boat, but at high water a boat may come in over thoſe rocks to the ſandy beach, which runs all along on this coaſt. The land by the ſea for about five or ſix hundred yards is a dry ſandy ſoil, bearing only ſhrubs and buſhes of divers ſorts. Some of theſe had at this time of the year, yellow flowers or bloſſoms, ſome blue, and ſome white, moſt of them of a very fragrant ſmell. Some had fruit like peaſe, in each of which there were juſt ten ſmall peaſe, I opened many of them, and found no more nor leſs. There are alſo here ſome of that ſort of bean which I ſaw at Roſemary Iſland, and another ſort of ſmall red hard pulſe, growing in pods alſo, with little black eyes like beans. I know not their names, but have ſeen them uſed often in the Eaſt Indies for weighing gold, and they make the ſame uſe of them at Guinea, as I have heard, where the women alſo make bracelets with them to wear about their arms. Theſe grow on buſhes; but here is alſo a fruit like beans on a creeping ſort of ſhrub like vine. There was great plenty of all theſe ſorts of pod-fruit growing on the ſand-hills by the ſea-ſide, ſome of them green, ſome ripe, and ſome fallen on the ground; but I could not perceive that any of them had been gathered by the natives, and might not probably be wholeſome food.

The

The land farther in, that is lower than what borders on the ſea, was, ſo much as we ſaw of it, very plain and even, partly ſavannahs, and partly woodland. The ſavannahs bear a ſort of thin coarſe graſs. The mould is alſo a courſer ſand than that by the ſea-ſide, and in ſome places it is clay. Here are a great many rocks in the large ſavannah we were in, which are five or ſix feet high, and round at top like a hay-cock, very remarkable, ſome red, and ſome white. The woodland lies farther in ſtill, where there were divers ſorts of ſmall trees, ſcarce any three feet in circumference, their bodies twelve or fourteen feet high, with a head of ſmall knibs or boughs. By the ſides of the creeks, eſpecially near the ſea, there grow a few ſmall black mangrove-trees.

There are but few land-animals. I ſaw ſome lizards; and my men ſaw two or three beaſts like hungry wolves, lean like ſo many ſkeletons, being nothing but ſkin and bones; 'tis probable that it was the foot of one of theſe beaſts that I mentioned as ſeen by us in New Holland, (Vol. II. p. 135.) we ſaw a rackoon or two, and one ſmall ſpeckled ſnake.

The land-fowls that we ſaw here were crows (juſt ſuch as ours in England) ſmall hawks, and kites; a few of each ſort; but here are plenty of ſmall turtle-doves, that are plump, fat and very good meat. Here are two or three ſorts of ſmaller birds, ſome as big as larks, ſome leſs, but not many of either ſort. The ſea-fowl are pelicans, boobies, noddies, curlews, ſea-pies, &c. but few of theſe neither.

The ſea is plentifully ſtock'd with the largeſt whales that I ever ſaw; but not to compare with the vaſt ones of the northern ſeas. We ſaw alſo a great many green turtle, but catched none, here being

being no place to ſet a turtle-net in, nor any channel for them, and the tides running ſo ſtrong. We ſaw ſome ſharks, and paracoots, and with hooks and lines we catched ſome rock-fiſh and old wives. Of ſhell-fiſh, here were oyſters both of the common kind for eating, and of the pearl-kind; and alſo wilks, conchs, muſcles, limpits, perriwinkles, &c. and I gathered a few ſtrange ſhells, chiefly a ſort not large, and thick-ſet all about with rays or ſpikes growing in rows.

And thus having ranged about, a conſiderable time, upon this coaſt, without finding any good freſh water, or any convenient place to clean the ſhip, as I had hoped for, and it being moreover the height of the dry ſeaſon, and my men growing ſcorbutic for want of refreſhments, ſo that I had little encouragement to ſearch further, I reſolved to leave this coaſt.

CHAP. XL.

The author ſails for the Iſland of Timor, with a diſcription of that and the adjacent iſlands, their inhabitants, natural productions. &c. and the Dutch and Portugueſe ſettlements there.

AND accordingly September 5th, 1699, I put to ſea with a gentle gale: yet was I quickly obliged to change my deſign. In a few days time I perceived, that the ſhoals upon the coaſt would make it very difficult, if not impracticable, to ſail along the ſhore, or put in where I might incline to do it. I therefore edged farther off to ſea, and ſo deepened the water from eleven to thirty-two fathoms. The next day being September 6th, we could but juſt diſcern the land, tho' we had then no more than about thirty fathom uncertain ſound-

ings; for, even while we were out of ſight of land, we had once but ſeven fathom, and alſo great and uncertain tides whirling about, that made me afraid to go nearer a coaſt ſo ſhallow, where we might be ſoon aground, and have but little wind to bring us off: for ſhould a ſhip be near a ſhoal, we might be hurled upon it unavoidably by a ſtrong tide, unleſs we had a good wind to work her off. Thus alſo on the ſeventh day, we ſaw no land, tho' the water decreaſed again to twenty-ſix fathom; for we had deepened it, as I ſaid, to thirty. This day we ſaw two water ſnakes, different in ſhape from thoſe we had formerly ſeen; one was very ſmall but long, the other long and as big as a man's leg, with a red head, which I never ſaw any have before or ſince. We had this day 16° 9' latitude by obſervation, and were to the north of the place I thought to have put in at, and though I knew, by the experience I had of it then, that there was a deep entrance in thither from the eaſtward, yet by the ſhoals I had hitherto found, ſo far ſtretched on this coaſt, I was afraid we ſhould have the ſame trouble to coaſt along afterwards, beyond that place; and, beſides the danger of running almoſt continually amongſt the ſhoals on a ſtrange ſhore, where the tides were ſtrong and high, I began to bethink myſelf, that a great part of my time muſt have been ſpent in being near a ſhore I was already weary of, which might be employed with greater ſatisfaction and better hopes of ſucceſs, in going forward to New Guiney; add to this, the particular danger of being upon a lee ſhore, when the north weſt monſoon ſhould once come on, the ordinary ſeaſon of which was now not far off, tho' this year it ſtaid beyond the common time; and it comes on at firſt with ſtorming tornadoes, violent guſts, &c. Wherefore quitting the thoughts of

put-

putting in at New Holland, I reſolved to ſteer away for the iſland Timor, where, beſides getting freſh water, I might probably expect to be furniſhed with fruits and other refreſhments to recruit my men, who began to droop, ſome of them being already, to my great grief, afflicted with the ſcurvy, which was likely to increaſe upon them by the brackiſh water they took in for boiling their oatmeal and entirely diſable them. The dry ſeaſon was alſo now pretty far advanced and I might not, probably, have found freſh water ſo plentifully upon digging at that part of New Holland, as when I was there before: and then conſidering the time that muſt be ſpent in paſſing thro', or going about to avoid the ſhoals, and in digging wells when we ſhould have gained the ſhore, I might very well hope to get to Timor, and with leſs time, trouble, and danger get freſh water there. Such were the reaſons that induced me to form a ſettled reſolution to bear away immediately for that iſland without delay.

It was September 8th that we ſailed for Timor, where I had heard there were both Dutch and Portugueſe ſettlements; but whereabouts on the iſland I knew not, and therefore it was the ſame thing to me which ſide of it we made firſt. On the 14th in the evening I had ſight of it, but it was the 15th before I attempted to land. The country appeared pleaſant enough to the eye; for the mountains were covered with wood and the adjacent meadows were very rich in graſs, but not the leaſt ſigns of any inhabitants or European ſettlements. This, and the winds blowing again from the ſouth eaſt, induced me to try what might be done on the north ſide of the iſland, where I was ſure of having ſmooth water and had a probability of eaſier landing; for on this ſide the land was ſo incumbered with man-

groves, there was no getting aſhore without running great hazards. On the 18th about noon, I altered my courſe, ſteering towards the ſouth weſt end of the iſland. In the evening we ſaw the iſland of Rotee, and another to the ſouth of it; on both which we diſcovered ſmoaks in the day and fires in the night. I was afterwards informed, that the Portugueſe have ſugar works upon the iſland of Rotee; but, as I knew nothing of that now, and the country having no very promiſing aſpect, I did not attempt to anchor there, but ſtood over again to the coaſt of Timor. On the 21ſt in the morning, being near the ſhore, I ſaw a very large opening, which appeared to be five leagues in breadth from eaſt to weſt; here I entered with my ſhip, ſounding as I went in, and came to an anchor in nine fathom water, about a league from the ſhore. This appeared then as a large inlet or bay, which entered very deep into the iſland of Timor; but afterwards I found it was really a ſtreight or paſſage between that and the iſland Anamabao or Anabao. I was led into this miſtake by the ſea-charts, which repreſent both ſides of the opening as parts of the ſame coaſt, making the whole but one iſland, and calling it by the name of Timor. Such miſtakes as theſe frequently happening through accidents, and ſometimes by deſign: no greater ſervice can be rendered to navigation in general, than to rectify ſuch errors; and it would be well, if thoſe, who make maps and charts, would carefully peruſe the moſt authentic voyages, and not content themſelves with barely copying ſuch draughts as come to hand, by which means they not only adopt the miſtakes, but alſo propagate the miſchievous deſigns of thoſe, who, by falſe repreſentations, endeavour to conceal what ought to be made public for the general good.

I propoſed to have ſailed thro' this opening to the main, but had not gone far, before the wind came about to the S. E. and blew ſo ſtrong I could not venture with ſafety nearer that ſide, becauſe it was a lee-ſhore; beſides, my boat was on the eaſt ſide of the Timor coaſt, for the other was, as I found afterwards, the Anabao ſhore, and the great opening I now was in, was the ſtreight between that iſland and Timor, towards which I now tack'd and ſtood over. Taking up my boat, therefore, I ran under the Timor ſide, and anchored at three o'clock in twenty nine fathom, half a mile from the ſhore; the part where we anchored before bearing S. by W. about two leagues. Not long after we ſaw a ſloop coming about the point laſt mentioned with Dutch colours, which I found, by ſending my boat aboard, belonged to Concordia, the only fort they have on Timor, about five leagues from hence. The governor of the fort who was in the ſloop and about forty ſoldiers, appeared to be much ſurpriſed at our coming this way, which, as he told our men, is a paſſage ſcarce known to any but themſelves, neither did he ſeem willing we ſhould come near the fort for water, tho' he ſaid he did not know of any water on all that part of the iſland, but only at the fort; and that the natives would kill us if they met us aſhore. By the ſmall arms my men had in the boat, they took us for pirates, and would ſcarcely believe the account of what we were and whence we came. They ſaid that about two years before, there had been a ſtout ſhip of French pirates here, who, after being ſuffered to water and refreſh themſelves and had been kindly uſed, had plundered and burnt the houſes of the Indians, ſubjects of the fort. And the Portugueſe here told us afterwards, that thoſe pirates, whom they alſo had entertained, had burnt their houſes, and had taken

the Dutch fort (tho' the Dutch cared not to own ſo much) and had driven the governor and factory among the wild Indians, their enemies. The Dutch told my men farther, they could not but think we had of ſeveral nations, as is uſual with pirate veſſels, in our ſhip, and particularly ſome Dutchmen, tho' all the diſcourſe was in French, for I had not one who could ſpeak Dutch: Or elſe, ſince the common draughts make no paſſage between Timor and Anabao, but lay down both as one iſland, they ſaid, they ſuſpected we had plundered ſome Dutch ſhip of their particular draughts, which they are forbid to part with. With theſe jealouſies, the ſloop returned towards their fort, and my boat returned with this news to me. But I was not diſcouraged with the account, not doubting but I ſhould perſuade them better when I came to talk with them. So the next morning I weighed and ſtood towards the fort, but the winds being ſomewhat againſt us, obliged us to tack two or three times, and coming near the further end of the paſſage, between Timor and Anabao, we ſaw many houſes on each ſide not far from the ſea, and ſeveral boats lying by the ſhore. The land on both ſides is pretty high, but higheſt on the Timor ſide, appearing very dry and of a reddiſh colour. The trees on either ſide were but ſmall, the woods thin, and, in many places, they were dry and withered.

The iſland Anamabao, or Anabao, is not very big, not exceeding ten leagues in length and four in breadth, yet has two kingdoms in it, viz. that of Anamabao on the eaſt ſide towards Timor and the north eaſt end; and that of Anabao which contains the ſouth weſt end and the weſt ſide of the iſland; but I know not which of them is largeſt. The natives of both are of the Indian kind, of a ſwarthy copper colour, with black lank hair. Thoſe of A-

namabao

namabao are in league with the Dutch, as theſe afterwards told me, and with the natives of the kingdom of Cupang in Timor, over againſt them, in which the Dutch fort Concordia ſtands. But they are ſaid to be inveterate enemies to their neighbours of Anabao. Thoſe of Anabao, beſides managing their ſmall plantations of cocoa trees, fiſh, ſtrike turtle and hunt buffaloes, killing them with ſwords, darts or lances: but I know not how they get iron; I ſuppoſe by traffic with the Dutch or Portugueſe, who ſend now and then a ſloop well armed to trade thither; for the natives would kill them, could they ſurprize them. They go always armed themſelves; and in fiſhing or hunting, they ſpend four or five days or more, in ranging about before they return to their habitations. We often ſaw them at theſe employments, but they would not come near us. The fiſh or fleſh that they take, beſides what ſerves for preſent uſe, they dry on a barbacue or wooden grate, ſtanding pretty high over the fire, and then carry it home when they return; we ſaw the places where meat was thus drying, but did not touch any of it.

But to proceed; tho' I did not think to ſtop any where till I came to the fort, which yet I did not ſee; when I came to the end of this paſſage I found if I went any farther, I ſhould be open to the ſea again; and therefore ſtood in for the ſhore on the eaſt ſide, and anchored in four fathom water, ſandy ground, a point of land ſtill hindering me from ſeeing the fort. But I ſent my boat to look out for it, which ſoon returned with an account of ſeeing it not above four or five miles from hence, but they did not come near it. It being now late, I would not ſend the boat thither till the next morning; mean while, about two or three hundred Indians, neighbours of the fort, and ſent

probably from thence, came and made fires on the ſandy beach, juſt oppoſite to the ſhip, where they ſtaid all night. Their arms were lances, ſwords and targets, and they made a great noiſe all night, to ſcare us, as we thought from attempting to land; but we took little notice of them. The next morning being Sept. 23d I ſent my clerk aſhore in the pinnace, with a young man who ſpoke French, to ſatisfy the governor that we were Engliſhmen in the king's ſhip, and to aſk water of him. In anſwer to the governors enquiries about me and my buſineſs in theſe parts, my clerk told him that I had the king of England's commiſſion, and deſired to ſpeak with him. He then beckoned to my clerk to come aſhore, but ſeeing ſome ſmall arms in the ſtern ſheets of the boat, he commanded him into the boat again, and would have him be gone. After ſome ſolicitations he was permitted to come aſhore, guarded by the lieutenant, three merchants, and about an hundred of the native Indians. Upon being told that we were in great want of water, and that we hoped we might come to their watering-place and fill; the governor replied that he had orders not to ſupply any ſhips but their own Eaſt-India Company, neither muſt they allow any European ſhips to paſs the way that we came, and wondered how we durſt approach their fort. My clerk anſwered him, that, had we been enemies, we muſt have come on ſhore among them for water. But, ſaid the governor, you are come to inſpect into our trade and ſtrength, and I will have you therefore be gone with ſpeed. My clerk anſwered, that I had no ſuch deſign, but would be contented to have water ſent on board where we lay, about two leagues from the fort, without coming any nearer them, and that I would make any reaſonable ſatisfaction for it. The governor then ſaid, that we ſhould

have

have what water we wanted, provided we came no nearer with the ſhip; and ordered, that, as ſoon as we pleaſed, we might ſent our boat full of empty caſks, and come to an anchor with it off the fort, till he ſent ſlaves to bring the caſks aſhore. The ſame afternoon I ſent up my boat, as he directed, with an officer and a preſent of ſome beer for the governor, which he would not accept, but ſent me off about a ton of water.

After this, I ſent my boat aſhore ſeveral times, with the ſame officer on board, to tranſact matters with the governor. But, as this officer had no great mind to the voyage, and deſired nothing ſo much as to ſee us obliged to return home, made ſuch ſtrange reports of the governor, that the reſt of the officers and the ſhips crew, grew uneaſy; ſo that tho' we were kindly entertained by the inhabitants of the other iſland, who brought us every day fiſh and fruit to ſell, yet it was reſolved, in a council held upon this ſubject, that we ſhould leave the neighbourhood of the Dutch fort, and endeavour, if it was poſſible, to find the Portugueſe ſettlements, where we were in hopes of being better treated. On the 27th in the morning, we anchored in the middle of Cupang-bay; but being able to diſcover nothing worth mentioning there, we ſailed from thence ſtill northward, in ſearch of the Portugueſe ſettlements. On the 29th we continued coaſting, without finding any proper place to land. The next day I ſent my mate aſhore, who diſcovered a very good watering-place in a bay where was good anchorage, which was a very acceptable ſervice; and the next morning I went aſhore to give neceſſary directions. In the ſpace of three days we filled about twenty-ſix tons of water, which made thirty tons in all on board. The two following days we ſpent in fiſhing with the ſain: the firſt morning we cathced

catched as many as ſerved all the ſhips company, but afterwards we had not ſo good ſucceſs. The reſt of my men, who could be ſpared from the ſhip, were ſent with the carpenter's mate, attended by three or four armed men for ſecurity, to cut timber for my boats. I ſhewed them what wood was fitting to cut for our uſe, eſpecially the calabaſh and maho; I ſhewed them alſo the manner of ſtripping the maho bark, and making therewith thread, twine, ropes, &c. Others were ſent out a fowling, who brought home, pidgeons, parrots, cockatoos, &c. I was always with one of the parties myſelf, eſpecially the carpenters, to haſten them to get what they could, that we might be gone from hence.

On the 6th of October I ſailed from this place; and on the 12th arrived ſafely at the firſt Portugueſe ſettlement, where we were well received, the people ſeeming very willing to do me any ſervice in their power. And afterwards, I ſtood round again nearer to the Dutch fort of Concordia; from whence the governor ſent me a meſſage, by which all former miſtakes were cleared up, and ſo good an underſtanding reſtored, that, at the requeſt of that gentleman, I went aſhore and dined with him at his fort, where I found great plenty of very good victuals, very well dreſſed, the linen white and clean, and all the plates and diſhes either ſilver or very fine china. This, indeed, muſt be ſaid in favour of the Dutch, that in all their ſettlements, every thing is managed with the utmoſt decency and order. After dinner, he ſhewed me ſome drawers full of ſhells, of which he had a very curious and well choſen collection. He ſeemed to be highly frank and open: told me, that, as to naval ſtores, it was not in his power to ſupply me, but that, for freſh proviſions, or whatever elſe he could ſpare, I might be ſure of them, for which I thanked him,

but

but made no uſe of his offer; becauſe my ſhip lay at a good diſtance from the fort, and I was afraid of truſting my men ſo far in the county, for fear the natives ſhould attack them. We met with great plenty of grain, ſo that, during the time we ſtaid here, very little of our ſalt proviſions were conſumed. We ſaw almoſt every day exceeding black clouds, and heard it thunder in the mountains for near a month, where we likewiſe ſaw it rain, but none came near us till about four days before our departure; previous to my account of which, I ſhall give an exact deſcription of the country.

The iſland of Timor is about ſeventy leagues long, and ſixteen broad: it lies nearly N. E. and S. W. the middle of it in about 9° ſouth latitude. It has no navigable river, nor any harbours, but abundance of bays where ſhips may ride ſafely enough at ſome ſeaſons of the year. The ſhore is very bold, free from rocks, iſlands, or ſhoals, excepting a few which are viſible, and therefore eaſily avoided. It is a pretty even ſhore, with ſandy bays, and low land, for about three or four miles up in the country; but, beyond that ſpace it is mountainous. There is no anchoring but within half a league or a league at fartheſt from the ſhore, and the low land which bounds the ſea, hath nothing but red mangroves, from the foot of the mountains, till you come within one hundred and fifty or two huudred paces of the ſea; and then you have ſand banks covered with a ſort of pine, ſo that there is no getting water on this ſide becauſe of the mangroves. At the ſouth weſt end of Timor, is a high iſland, called Anabao, about ten or twelve leagues long, and about four broad; near which the Dutch are ſettled. It lies ſo near Timor, that it is laid down in our draughts as part of that iſland; yet we found a narrow deep channel, fit for any ſhips

ſhips to paſs between them. This channel is about ten leagues long, and, in ſome places, not above a league wide, running N. E. and S. W. ſo deep, that there is no anchoring but very near the ſhore: there is but little tide, the flood ſetting north, and the ebb to the ſouthward. At the north eaſt end of this channel are two points of land, not above a league aſunder, one on the ſouth ſide upon Timor, called Cupang, the other on the north ſide, upon the other iſland Anabao. From this laſt point the land tends away northerly two or three leagues, opens to the ſea, and then bends in again to the weſtward. Being paſt theſe points, you enter into a bay about eight leagues long and four wide. This bay turns in, on the ſouth ſide, N. E. by E. from the ſouth point before mentioned, making many ſmall points, or little coves. About a league to the eaſt of the ſaid ſouth point, the Dutch have a ſmall ſtone fort, ſituated on a ſolid rock, cloſe by the ſea. This fort they call Concordia. On the eaſt ſide of the fort, there is a ſmall river of freſh water, which has a broad boarded bridge over it, near the entry into the fort. Beyond this river is a ſmall ſandy bay, where the boats and barks land. About an hundred yards from the ſea ſide, and as many from the fort, and forty yards from the bridge on the eaſt ſide, the company, as at moſt of their forts, have a fine garden ſurrounded with a ſtone wall. In it is plenty of all kinds of ſallads, cabbages, roots for the kitchen and a parterre. In ſome parts of it are fruit trees, as jacas, pimplenoſe, oranges, ſweet lemons, &c. and, by the walls are cocoa-nut and toddy trees in great plenty. Beſides theſe they have muſk and water melons, pine apples, pomecitrons, pomgranats, and other ſorts of fruits. Between this garden and the river there is a kind of paddock for black cattle, of which they

have

have plenty. Beyond the company's ground, the natives have their houſes, in number about fifty or ſixty. There are forty or fifty ſoldiers belonging to the fort: but I know not how many guns they have, for I only ſaw one baſtion, wherein were four guns. Within the walls, there is a neat little church or chapel. As to the natives of the iſland, or original inhabitants, they are of a middle ſtature, ſtrait bodied, ſlender limbed, long viſaged, their hair black and lank, their ſkin very ſwarthy. They are very dexterous and nimble, but withal lazy in the higheſt degree, and ſaid to be dull in every thing, but treachery and barbarity. Their houſes are but mean, their cloathing only a ſmall cloth about their middle; but ſome of them, for ornament, have frontlets of mother of pearl, or thin pieces of ſilver or gold, made of an oval form, of the breadth of a crown piece, curiouſly notched round the edges, five of theſe placed one by another a little above the eye-brows, making a ſufficient guard and ornament for their forehead. Theſe are ſo thin, and placed on their foreheads ſo artificially, that they ſeem rivetted thereon: and indeed the pearl oyſter ſhells make a more ſplendid ſhew, than either ſilver or gold. Others of them have palmeto caps, made in divers forms. As to their marriages, they take as many wives as they can maintain, and ſometimes ſell their children to purchaſe more wives. I enquired about their religion, and was told they had none. Their common ſubſiſtance is Indian corn, which every man plants for himſelf. They take but little pains to clear the ground; for, in the day time, they ſet fire to the withered graſs and ſhrubs, and that burns them out a clear plantation againſt the next wet ſeaſon. What other grain they have, beſides Indian corn, I know not. Their plantations are but very mean; for they delight moſt

moſt in hunting; and here are wild buffaloes and hogs enough, tho' very ſhy, becauſe their frequent hunting. They have a few boats and ſome fiſhermen. Their arms are lances, thick, round, ſhort truncheons and targets; with theſe they hunt and kill their game, and uſe the ſame weapons againſt their enemies too: for this iſland is now divided into many kingdoms and all of different languages, tho' in their cuſtoms and manner of living, as well as ſhape and colour, they ſeem to be originally of one deſcent. The chief kingdoms are, Cupang, Amabie, Lortribie, Pobumbie, Namquimal.

The iſland alſo of Anambao or Anabao is a kingdom. Each of theſe has a ſultan, who is ſupreme in his kingdom, and hath under him ſeveral rajas and other inferior officers. The ſultans, for the moſt part, are enemies to each other; which enmities are fomented and kept up by the Dutch, whoſe fort and factory are ſituated in the kingdom of Cupang; and therefore the bay, near which they are ſituated is called Cupang bay. They have only as much ground as they can keep within reach of their guns, yet this whole kingdom is at peace with them, and they freely trade with its inhabitants, as alſo with the iſlanders on Anabao who are at peace, as well with the natives of Cupang, as with the Dutch reſiding there. But they are implacable enemies to thoſe of Amabie, who are their next neighbours, and in amity with the Portugueſe, as are alſo the kingdoms of Pobumbie Namquimal, and Lortribie. It is moſt probable, that theſe two European ſettlements are the greateſt occaſion of their continual wars. The Portugueſe boaſt exceſſively of their ſtrength here, and that they are able, at pleaſure, to rout out the Dutch, if they had authority from the king of Portugal; and that they often write to the viceroy of Goa about it, and tho'

their

their requeſt be not yet granted, they live in hopes it ſoon will. Theſe have no forts, but depend on their alliance with the natives, for they are already ſo mixed, that it is hard to diſtinguiſh whether they are Portugueſe or Indians. Their language is Portugueſe, their religion Romiſh and they ſeem to acknowledge the king of Portugal for their ſovereign, but will not accept of any officers ſent by him. They ſpeak the Malayan, their own country language and the Portugueſe indifferently, and the chief officers I ſaw were of this mixed kind: of the three or four white men among them, two were prieſts. Of this mixed breed there are ſome thouſands, ſome of whom have ſmall arms of their own, and know how to uſe them. The chief perſon is called Captain Major, and ſeems to have great authority here, being a white man ſent thither by the viceroy of Goa. He ſeldom comes down from his reſidence at a place called Porto Nova, which the people at Laphao told me was a great way off, ſo I did not ſee him, nor could I get any particular account of it. Some told me he commonly commands an army of Indians in the dry ſeaſons to guard the paſſes on the mountains between them and the Cupangayans. The next man to him was Alexis Mendoſa, an Indian of the Romiſh religion, who ſpeaks very good Portugueſe. He is called Lieutenant, commands next to the Captain Major, tho' he lives five or ſix miles from the ſea and hath another under him at the fort, or rather blockhouſe, on the ſea ſide.

What I obſerved of greateſt conſequence during my ſtay here, was the different ſtate and ſtill more different policy of the Dutch and Portugueſe ſettled here: and I believe, the account I am about to give of them may paſs for a pretty good deſcription of all their ſettlements; for as their genius is alike

alike, ſo its conſequences are pretty near the ſame in all. The Dutch fort, is a regular piece of fortification, well provided with artillery and ammunition, and having a ſufficient number of ſoldiers to ſecure them againſt any attempts of the natives, they depend entirely upon themſelves, and therefore, by always ſuſpecting, are never deceived. Their trade is very conſiderable, becauſe they furniſh the natives with a greater variety and better ſorts of goods, than their rivals in commerce the Portugueſe. The latter have indeed a block houſe or two, but hardly any guns, and are wretchedly provided with ammunition. This is owing to the looſeneſs of their government, or, to ſpeak with greater propriety, to their having no government at all, for they boaſt of being Portugueſe, yet they pay no obedience to the viceroy of Goa, who conſequently troubles not himſelf about them, leaving them to provide military and naval ſtores at the worſt hand by purchaſe, from the Chineſe. Being in a manner Indians themſelves, they truſt to their own ſtrength and that of the natives, and fancy themſelves much ſtronger than the Dutch becauſe they can muſter ten times their number; but their crafty neighbours never bring it to a trial, only ſtirring up the people of Cupang to a continual war with the Portugueſe, and never give them any quarter. This is the reaſon that their captain-major remains always on the mountains, for if the paſſes were not carefully guarded, the Portugueſe, notwithſtanding their boaſted ſtrength, would ſoon be be driven from the coaſt.

Not far from the Dutch fort at Concordia, the people of Cupang have an houſe or rather hovel, built on purpoſe to hold Portugueſe heads; for when they kill any of their enemies, the head is brought hither; and when I was here, it was ſaid

to

to be almoſt full: ſo that while the Portugueſe are threatning to drive the Dutch out of the iſland, the Dutch are taking off their heads as faſt as they can, without ſo much as uttering their reſentment. Beſides the people already deſcribed, there are alſo ſome Chineſe merchants from Maccao, who bring hither coarſe rice, coarſe or mixt gold, tea, iron-work, porcelane, and ſilk both wrought and raw, and get in exchange pure gold, as it is gathered here; bees-wax, ſandal-wood, and coire. It is ſaid there are about twenty ſmall Chineſe veſſels come hither from Maccao, and commonly one veſſel a year from Goa with European commodities, callicoes and muſlins. There are alſo ſome ſmall barks trading from this place to Batavia, with European and Indian goods and rice. The veſſels generally come hither in March and ſtay till September; by this means ſecuring the benefit of the trade-wind, and obtain regular and advantageous markets for their commodities. This country, taken all together, is very rich and plentiful: there are fruit-trees of all kinds in great plenty, and abundance of timber; the plantations produce indian corn and rice, and might be ten times as much, if they were not ſo lazy: wild and tame beaſts innumerable: fowls in vaſt quantities: the woods ſwarm with bees, which make vaſt quantities of honey and wax: the mountains and brooks afford much gold and copper, but I don't know where they get it. The ſea is very well ſtocked with fiſh; among which, the moſt remarkable are cockle-merchants and oyſter-crackers, which feed on ſhell fiſh, having two very hard, thick, black bones in their throats, with which they break to pieces ſuch ſhell fiſh as they live upon. The ſhell fiſh are long oyſters, common oyſters, which are very fat, and a third ſort whoſe ſhells are not eaſily diſtinguiſhed from ſtones, yet

 theſe

theſe are the beſt; for they are very ſweet and well taſted, and ſo large, that three or four of them are ſufficient for a dinner. The cockles are as large as a man's head, very fat and ſweet, ſo that two or three are enough for a meal: here are alſo cray fiſh and ſhrimps: many green turtles; ſome aligators, &c.

CHAP. XLI.

The author leaves Timor and proceeds to make further diſcoveries of New Guiney, New Britain, &c. with a deſcription of the inhabitants, their commerce, natural productions, &c.

ON new year's day we diſcovered the coaſt of New Guiney, which appeared to be very high land; and ſoon after, we diſcovered iſlands almoſt on every ſide. On Januaay 14th, 1700, in the afternoon, we ſaw ſome ſmokes from the iſlands lying to the weſt of us, and bore away for them, with all the advantage of a briſk gale. About ſeven in the evening, we anchored in thirty five fathom water, about a league from a pretty large iſland, where we remained all night, and ſaw many fires on ſhore. In the morning we weighed and ran farther in, expecting to have ſhallower water; but within a mile of the ſhore there was thirty eight fathom, good holding ground. While we were under ſail, two canoes came off and ſpoke us, but we neither underſtood their language or ſigns. We waved to them to come on board, and called to them in the Malayan language to do the ſame, but they would not; yet they came ſo nigh us, that we could ſhew them what we had to truck with them, yet this would not entice them to come on board; but they made ſigns for us to follow them aſhore. Then I went after them in my pinnace, carrying with

with me knives, beads, hatchets, &c. When we came near the ſhore I called to the two men I ſaw in the Malayan language, for the reſt lay in ambuſh behind the buſhes, but as ſoon as I threw on ſhore ſome knives and other toys, they came out, flung down their weapons, and came into the water to the boats ſide, making ſigns of friendſhip by taking water out of the ſea with one hand and powering it upon their heads. The next day in the afternoon, ſeveral other canoes came on board, with roots and fruits which we purchaſed. This iſland has no name in our drafts, but the natives call it Pulo Sabuda. It is about three leagues long and two miles wide, more or leſs, and ſo high as to be ſeen eleven or twelve leagues. It is very rocky, yet about the rocks there is good yellow and black mould, not deep, tho' producing plenty of good tall trees, and bearing any fruit or roots, which the inhabitants plant. I do not know all its produce, but what we ſaw were, plantains, cocoanuts, pine apples, oranges, papoes, potatoes, and other large roots. Here is alſo another ſort of wild jackas, about the bigneſs of a man's two fiſts, full of ſtones or kernels, which eat pleaſant enough when roaſted. The libby tree grows here in the ſwampy valleys, of which they make ſago cakes. I did not ſee them make any, but was told by the inhabitants, that it was made of the pith of the tree, in the ſame manner I have already deſcribed. They ſhewed me the tree whereof it is made, and I bought about forty cakes. I bought alſo three or four nutmegs in the ſhell, which did not ſeem to have been long gathered, but, whether they are the growth of this iſland or not, I cannot ſay; for the natives ſeemed to prize them much, and would not tell whence they had them. What beaſts this iſland affords, I know not, but here are both ſea and land

fowls: of the firſt, boobies and man of war birds are the chief; ſome goldens and milk white crab-catchers. The land fowls are, pigeons about the bigneſs of mountain pigeons in Jamaica, and grow about the ſize of thoſe in England, and much like them; but the inner part of their feathers is white, and the outſide black, appearing all black, unleſs you extend the feathers. Here are large ſky coloured birds, ſuch as we killed at New Guinea, and many other ſmall birds unknown to us. Here are likewiſe abundance of bats, as big as young conies, their necks, heads, ears and noſes like foxes, their hair rough, of a whitiſh yellow about their necks, on their heads and ſhoulders black; their wings four feet from tip to tip, and their ſmell like foxes. The fiſh are baſs, rock-fiſh, and a ſort like mullets, old wives, whip-rays and ſome other ſorts that I know not; but no great plenty of any: for it is deep within leſs than a mile of the ſhore, then there is a bank of coral rocks, within which is ſhoal water, fine clean ſand; ſo there is no good fiſhing among theſe. This iſland lies in 2°. 43' S. lat. and its meridian diſtance from port Babao in the iſland of Timor is four hundred and eighty-ſix miles. Beſides this iſland there are nine or ten ſmall ones, as they are laid down in the drafts. The inhabitants of this iſland are a ſort of tawny Indians, with long black hair, differing little in their manners from the Mindanayans and others of theſe eaſtern iſlands. Theſe ſeem to be the chief, for, beſides them, we ſaw alſo curlpated New Guiney negroes, many of whom are ſlaves to the others, but, I think, not all. They are very poor; wear no cloths; but only a clout about their middle made of the rinds of the tops of palmeto trees; and the women a ſort of calico cloths. Their chief ornaments are blue and yellow beads worn about the wriſt, the men

arm

arm themſelves with bows and arrows, lances, and broad ſwords like thoſe of Mindanao. Their lances are pointed with bone. They ſtrike fiſh very ingeniouſly with wooden fiſh gigs and have a very dexterous way of making the fiſh riſe, for they have a piece of wood curiouſly carved and painted much like a dolphin, and perhaps of other figures, which they let down into the water by a line, and a ſmall weight to ſink it to the depth they think proper, then haling the line into their boats very faſt, and the fiſh riſing up after this figure, they ſtand ready to ſtrike them when they are near the ſurface of the water. Their chief livelyhood is from their plantations, yet they go over in large boats to New Guiney, where they get ſlaves, fine parrots, &c. which they carry to Ceram and exchange for calico. One boat came from thence a little before I arrived here, of whom I bought ſome parrots, and would have bought a ſlave, but they would not barter for any thing, except calicoes, which I did not chuſe. Their houſes on this ſide of the iſland were very ſmall, and ſeemed only to be for neceſſity; but on the other ſide, we ſaw good large houſes; their proes are narrow, with outliers on each ſide, like other Malayans. I know not what is their religion, but by their drinking brandy out of the ſame cup with us, without any ſcruple, I think they are not Mohammadans. At this iſland we continued laying in ſtore of ſuch roots and fruits as the country afforded. And on the 20th at half an hour after ſix in the morning weighed, and ſtanding out, ſaw a large boat full of men, who rowed towards their habitations, where we ſuppoſed they had withdrawn themſelves for fear of us, as their future conduct confirmed us in that opinion.

After we left this coaſt, where we found it impoſſible to do any thing, in regard to diſcoveries or

trade, we paſſed by many ſmall iſlands, and thro' many dangerous ſhoals, without meeting with any thing remarkable, till on Feb. 4th we found ourſelves off the north weſt cape of N. Guiney, called by the Dutch, Cape Malo. There lies off this cape a ſmall woody iſland, which I ſent my boat to examine, intending to anchor near it; at their return, they brought a cockle of a prodigious ſize, and reported that they had ſeen many more ſtill larger, therefore, I called it cockle iſland; and the next day I ſent thither one boat to cut wood, and the other to fiſh; which, at their return, brought ſeveral cockles of ten pounds weight, but being then high water, they were prevented from getting any of the largeſt, ſuch as they brought the day before, the ſhell of which weighed ſeventy eight pounds. In the afternoon I went aſhore on another iſland, where were more pigeons than I had ever ſeen before, tho' all theſe iſlands abound with that ſort of fowl, and ſuch plenty of cockles, that we could have loaded the boat with them in an hour's time. This place I called pigeon iſland; and on the 7th in the afternoon, my men brought me from thence one empty cockle ſhell, which weighed two hundred and fifty eight pounds. The ſame evening, we anchored near a very pleaſant iſland, about two leagues and a half in length, the country high and exceeding well covered with wood; the trees were of ſeveral ſorts, moſtly unknown to us, but all green and flouriſhing; many of them bore flowers of different colours, white, purple, and yellow, and all ſo exceeding fragrant, as to be ſmelt at a conſiderable diſtance: the trees, were generally ſpeaking, tall and ſtrait, and one in particular of a clean, ſmooth body, without knot or limb, between ſixty and ſeventy feet high, and three fathoms about. The ſoil of the iſland is black, but not deep: the

next morning I went on ſhore, drank his Majeſty's health and called it King William's iſland. On the 9th we plied all the day between the main and ſeveral other iſlands to the eaſtward of King William's iſland, the wind eaſterly and fair weather: but it ſoon altered and we had a great deal of rain. On the 14th we found ourſelves about ſix leagues from the continent of New Guinea, which appeared very high: and we ſaw two headlands, about twenty leagues diſtant from each other, the one eaſt, the other weſt, the laſt is called the Cape of Good Hope: the variation of the compaſs here was 4° to the eaſt. On the 15th we ſaw an inhabited iſland, which I called Providence, at no great diſtance from another ſmall iſland called in the Dutch charts William Scouten's iſland.

We croſſed the Line on the 16th, and found the variation 6° 26' to the eaſt; but in a few days, the variation increaſed to very near 9°. We ſaw on the 23d in the afternoon, two ſnakes; and, the next morning another paſſed by us, which was vigorouſly attacked by two fiſhes, that had kept us company five or ſix days: they were ſhaped like mackrel, about their bigneſs and length, and of a yellow colour inclining to green. The ſnake ſwam away from them very faſt, keeping his head above water: when one fiſh ſnaped at his tail, he turned himſelf and the fiſh withdrew; then the other ſnapt; ſo that by turns, they kept him employed; yet did he defend himſelf and ſwam away at a great pace, till they were all out of ſight. The 25th betimes in the morning we ſaw an iſland about fifteen leagues to the ſouthward, and bore away for it, ſuppoſing it to be what the Dutch call Wiſharts iſland; but finding it to be another I called Matthias, it being that ſaint's day. This iſland is about nine or ten leagues long, mountainous and woody,

with many ſavannahs and ſome ſpots of land, which ſeemed to be cleared. At eight in the evening we lay by, intending, if we could, to anchor under Matthias iſland: but the next morning, ſeeing another iſland about ſeven or eight leagues to the eaſtward of it, we ſteered away for it; at noon, we came up fair with the S. W. end, intending to anchor on the S. E. ſide, but the tornadoes came in ſo thick, that I could not venture in. This iſland is pretty low and plain, cloathed with woods; the trees very green, tall, and large, and as thick as they could ſtand one by another; it is about two or three leagues long; and, at the S. W. point, there is another low, ſmall, woody iſland, about a mile round, and a mile from the other: between them is a riff of rocks, which joins them together; the bigger I called Squally iſland, becauſe of the tempeſtuous weather we met with upon its coaſt. The deſire of making diſcoveries obliges a man to lay hold of every circumſtance that is in the leaſt promiſing, and to neglect nothing that may gain him a tolerable acquaintance with the coaſts he viſits. Subſequent voyagers may eaſily diſcover great ſeeming errors in ſuch a man's conduct; but impartial judges will be always ready to allow, that it is one thing to attempt and another to proſecute diſcoveries. He who engages in the former, actually ſteers in the dark, and moves without guide or information, whereas the latter follows the lights which the other had ſtruck out, and not only improves the effects of his ſagacity, but acquires wiſdom alſo by attending to his miſtakes. Yet the pleaſure of the diſcoverer, is certainly more quick and lively, than that of any critical inquirer into the conduct of his voyages. In this expedition, however, the diſcoveries were not great enough to excite envy; and, yet, poſſibly, they may deſerve

attention

attention and profecution; ſince, tho' the countries we ſaw were not rich, yet they were pleaſant and appeared capable of improvement. It is alſo to be obſerved, that we only viſited the out ſkirts of the country; and, by the fringes of a carpet, it is very hard to judge of the whole piece. In order to conquer this difficulty, and at the ſame time, to rid ourſelves of the dangers and diſtreſſes we continually experienced in ſteering among theſe iſlands, we reſolved to bear away for the continent, in hopes of indemnifying ourſelves for the ſufferings and diſappointments we had hitherto met with on the coaſt of N. Guiney.

The continent appears high and mountainous, adorned with flouriſhing trees. The ſides of the hills had many large plantations, and cleared pieces of land, which, together with the ſmokes we ſaw, were certain ſigns of its being inhabited; and I was deſirous of entering into commerce with the inhabitants: being near the ſhore, we ſaw firſt one proe, then two or three more, and at laſt, a great many boats came from all the adjacent bays: when they were forty-ſix in number, they approached ſo near us, that we could ſee each others ſigns, and hear each other ſpeak, tho' we could not underſtand each other. They made ſigns for us to go towards the ſhore, pointing that way: the ſqually weather, at firſt, made me cautious of going too near, but now beginning to look pretty clear, I endeavoured to get into a bay ahead of us, which we could have done at firſt well enough, but, while we lay by, were driven to leeward, which made it more difficult now. The natives lay in their proes round us, and I ſhewed them beads, knives and glaſſes, to allure them to come on board; but they would not come near enough to receive any thing from us; ſo I threw out a knife faſtned to a piece of board, and

a glaſs bottle corked up with ſome beads in it, which they took up, and ſeemed much pleaſed with them. They often ſtruck their left breaſt with their right hand, and as often held up a black truncheon over their heads, which we took for a token of friendſhip, and therefore we did the ſame; and when we ſtood in towards the ſhore, they ſemed to rejoice, and frowned when we ſtood off; yet kept us company in their proes, ſtill pointing to the ſhore. About five o'clock we got within the mouth of the bay, and ſounded ſeveral times, but found no ground within a mile from the ſhore. The baſon of this bay was about two miles farther in, into which we might have gone; but night coming on, and a black tornado riſing in the weſt, I thought it not prudent to run in; beſides we had near two hundred men in proes cloſe by us, and the ſhores of the bays lined with men from end to end: there could not be leſs than three or four hundred more. What weapons they had, I knew not, nor their deſigns; therefore, at their firſt coming near us, I had got up all our ſmall arms, and made ſeveral put on cartouch boxes to ſecure us from treachery. At laſt, I reſolved to go out again, which the natives in their proes perceiving, began to ſling ſtones at us as faſt as they could, being provided with engines for that purpoſe (and therefore I named this place Slingers bay) but at the firing of a ſingle gun, they were all amazed, drew off, and ſlung no more ſtones. They got together, as if conſulting what to do, lay ſtill, and did not make towards the ſhore, tho' ſome were killed or wounded, and many more had paid for their boldneſs, but I was unwilling to cut off many of them, leſt they could not afterwards have been brought to treat with me. The next day, we ſailed cloſe by an iſland, and ſaw many ſmokes and men on the bays, out of which two

or

or three canoes came to overtake us, but could not, tho' we were under an eaſy ſail I could not ſtay for them. I ſounded ſeveral times near the S. E. point, but found no ground within a mile of the ſandy bays. About three leagues from this point we opened a large deep bay, ſecured from the N. W. and S. W. winds, there were two other iſlands to the N. E. of it, which ſecured the bay from N. E. winds; one ſmall and woody, the other about a league long, inhabited and full of cocoa-nut trees. I endeavoured to get into this bay, but the flaws from the high land prevented me, and night coming on, I bore away to the ſmall inhabited iſland, intending to anchor on the eaſt ſide of it: but the iſland proving too narrow to afford us any ſhelter, I tacked for the greater iſland, and lay by about the midway between both. Between ſeven and eight at night we ſaw a canoe cloſe by us, and ſeeing no more, ſuffered her to come on board: the three men in her brought off five cocoa-nuts, for which I gave each a knife and a ſtring of beads to encourage them to come again in the morning, but before theſe went away we ſaw two more coming; therefore we ſtood to the northward from them, and then lay by till day; ſo we ſaw no more boats this night, nor deſigned to ſuffer any more to come on board in the dark. By nine the next morning we were within a league of the great iſland, but were kept off by violent guſts of wind.

On March 3d, being about five leagues to leeward of the great iſland, we ſaw the main land ahead, and another great iſland to the leeward, diſtant about ſeven leagues and bore away for it: in the Dutch drafts it is called Garrat Dennis iſle; about fourteen or fifteen leagues round, high, mountainous and very woody: ſome trees appeared very large and tall, and the bays abounded with very

very large cocoa nut tree; where we alſo ſaw ſome ſmall houſes. The ſides of the mountains are thick ſet with plantations, and the mould, in the new cleared land, appears of a browniſh red colour. This iſland is full of points ſhooting into the ſea, making many ſandy bays, full of cocoa nut trees: the middle of the iſland lies in 3° 10 S. lat. very populous; the natives very black, ſtrong, and well limbed people, with round heads, ſhort curled hair, which they ſhave into ſeveral forms, and dye of divers colours, red, white, and yellow. They have round faces, and broad bottle noſes, yet are agreeable enough, till they disfigure them by painting, and by wearing great rings thro' their noſes, as thick as a man's thumb and about four inches long, which run quite thro' both noſtrils, one end coming out by one cheek bone and the other end againſt the other, and their noſes are ſo ſtretched, that only a ſmall ſlip appears above the ornaments: they have alſo great holes in their ears, wherein they wear ſuch ſtuff as in their noſes. They are very dexterous, active fellows in their proes, which are very ingeniouſly built, narrow and long, with outlayers on one ſide; the head and ſtern higher than the reſt, and adorned with many devices of ſome fowl, fiſh, or a man's head painted and carved, which, tho' but a rude reſemblance, ſhews an ingenious fancy; but what inſtruments they uſe in making their proes or carving, I know not, for they ſeem utterly unacquainted with iron: their paddles are very neat, and they manage the proes dexterouſly and make great way thro' the water. Their weapons are lances, ſwords, ſlings and ſome bows and arrows: they have alſo wooden fiſhgigs for ſtriking fiſh. Thoſe, who came to aſſault us in Slinger's-bay, are in all reſpects like theſe, and I believe theſe are no leſs treacherous: their ſpeech is clear

clear and diſtinct: the words they uſed moſt when near us, were *Vacouſu Allamais*, and then pointed to the ſhore. Their ſigns of friendſhip are either a great truncheon or a bough of a tree, full of leaves, put on their heads, often ſtriking their heads with their hands.

The next day we had a pleaſant gale of wind, which carried us under an high iſland, very woody, full of plantations on the deſcents of the mountains and on the ſhores of the bays. This iſland lies in the lat. of 3° 2'5. S. diſtant from the meridian of Cape Mabo three hundred and ſixteen miles. On the S. E. part of it are three or four ſmall woody iſlands, one high and peeked, the other low and flat, all thick planted with cocoa nut trees and other wood. On the north is another iſland of an indifferent height, and ſomewhat larger in circumference than the great high iſland laſt mentioned. We paſſed between this and the high iſland, which is called in the Dutch draughts Anthony Cave's iſland; it's probable, the flat low iſland, the other ſmall one, nor the iſlands to the north of Garret Dennis's iſland, were never ſeen by the Dutch. As ſoon as we came near Cavis iſland, ſome canoes came about us, making ſigns for us to come aſhore, as the reſt had done before, probably thinking we could run the ſhip aground like their proes; for we ſaw neither ſail nor anchor among them, tho' moſt Eaſt Indians have both: their proes were made of one tree, well dug, ſmall but well ſhaped, with outlayers on one ſide. Endeavouring to anchor about a mile from the ſhore we found no ground, ſo we kept cloſe along the north ſide, ſounding till we came to the N. E. end, the canoes ſtill accompanying us, and the bays being covered with men going along as we ſailed, and ſome ſtriving to ſwim to us, but we left them a ſtern.

The

The current now driving in towards the flat iſland, we were followed by a canoe from Cave's iſland: to each of theſe in it I gave a knife, a looking-glaſs, and a ſtring of beads; ſhewing them pumpions and cocoa nuts, and expreſſing a deſire to have more, they inſtantly produced three out of their boat: when we ſhewed them nutmegs, they made ſigns that they had ſuch growing on their iſland: likewiſe being ſhewed gold duſt, they cried out *Manneel! Manneel!* pointing towards the land. Soon after they were gone, two or three canoes came from the flat iſland, and invited us thither. Theſe were black, with frizzled hair, tall, luſty, well ſhaped men; made the ſame ſigns of friendſhip and ſeemed to ſpeak the ſame language. Their canoes were neatly made, and finely carved, with figures of various kinds of fiſh: and of all the Indians we had ever ſeen, ſeemed the moſt tractable and polite.

We ſoon after ſaw another iſland, called in the Dutch maps, St. John's; the people of which ſpoke the ſame language with thoſe of Cave's iſland. We ſaw from hence, an head land to the S. of us, beyond which we could diſcover no land at all; whence I ſuppoſed, that from thence the land tends away more weſterly. This headland lies in the lat. of 5° 2' S. and its meridian diſtance from Cape Mabo, is 1290 miles; in the night we lay by, for fear of over-ſhooting this headland; between which and Cape St. Mary's, the land is mountainous and woody, having many points ſhooting out into the ſea, and make ſo many fine bays; the coaſt lies N.N.E. and S.S.W. We ſaw no ſmokes nor plantations near this headland, which we opened fair by night; and as no Dutch charts deſcribed this coaſt ſo far by ten leagues, I called it Cape St. George, the bay formed by this mountain, St. George's-bay,

and

and the iſland before it St. George's iſland. The next morning we ſaw a burning mountain up in the county. The next morning we paſſed the S. W. cape of this bay, and when we were abreaſt of it, I called up my officers, and named it Cape Orford, in honour of my noble patron Edward Ruſſell. E. of Orford; it lies in 5° 2'4 S. lat. and forty four miles weſt from the meridian of Cape St. George. The land on each ſide the cape is more ſavannah than woodland, and higheſt on the N. W. ſide: the cape itſelf is a bluff point, of an indifferent height, with a flat table land at top: when we were to the weſt of the cape, it appeared to be a low point ſhooting out, with many inhabitants about it. We ſteered along S. W. as the land lies, about ſix leagues off the ſhore; being deſirous to cut wood and fill water, I lay by in the night for fear of miſſing any proper place for getting thoſe neceſſaries.

This coaſt is high and mountainous, not ſo thick ſet with trees as on the other ſide of C. Orford, but otherwiſe pleaſant enough. I could have wiſhed for ſome more favourable opportunities than had hitherto offered, for examining the heart of this new diſcovered country, and for opening a trade with the natives, both of which would be extremely beneficial to Great Britain. For this reaſon I continued my endeavours in ſpite of all diſappointments; and perceiving my officers and men more tractable and obedient than formerly, I reſolved to examine the continent as minutely as I had the iſlands: the fruit of which enquiry, ſhall be laid before the reader with the ſame truth and ſincerity, which I hope, appears in the former part of this relation; for tho' diſcoveries be not in a man's power, yet a candid relation of his attempts, may afford lights to others, and thereby procure them that ſucceſs of which he had failed.

On

On the 14th of March we had ſight of a pretty deep bay, with ſome iſlands about it, where I imagined there might be ſafe riding and ſome refreſhments; for, by the ſmokes we ſaw, it was very evident, that the country was full inhabited.

About ten we ſaw a point running pretty far out into the ſea, and a bay within, where we were in hopes of meeting with freſh water; and theſe hopes were greatly increaſed, when, going into the bay with a moderate gale, we diſcerned all the marks of a well cultivated country, cocoa-trees, regular plantations, and a conſiderable number of houſes. When I came within four or five miles of the ſhore, ſix ſmall boats came off to view us, with about forty men in them: perceiving they would not come on board, I made ſigns for them to go aſhore; but they did not, or would not, underſtand me; ſo I whiſtled a ſhot over their heads from my fowling piece, and then they pulled away for the ſhore as hard as they could. Theſe were no ſooner aſhore, but we ſaw three boats coming from the iſland to leeward of us, which ſoon came within call of us, for we were becalmed; one was a large well built boat, with about forty men in her, the other two were but ſmall: not long after another large boat, with a high head and ſtern, painted and full of men, came out of that bay where we intended to go. This, as well as the others, I thought came off to fright us; therefore I fired another ſmall ſhot over the great boat that was next us, which made them take to their paddles, and row wide of us, directing their courſe towards the other great boat that was coming off: when they were pretty near each other, I cauſed the gunner to fire a gun, laden with round and partridge ſhot, between them, which was done ſo very dexterouſly, that the ſmall ſhot dropt in the water ſhort of them, but the round ſhot went between

tween the two boats and grazed about one hundred yards beyond them: this ſo frightened them, that they rowed away for the ſhore as faſt as they could without coming near each other, and the ſmall boats made the beſt of their way after them, and with a gentle breeze, at S. S. W. we ſtood in after them. When we came juſt by the point, I ſaw a great number of men peeping from under the rocks and ordered a ſhot to be fired to ſcare them; which grazed between us and the point; then mounting again, flew over the point and grazed a ſecond time juſt by them. We were obliged to ſail along juſt by the bays, and ſeeing multitudes under the trees, I ordered a third ſhot to be fired among the cocoa-nut trees to ſcare them, for my buſineſs being to wood and water, I thought it neceſſary to ſtrike ſome terror into the inhabitants, who were very numerous, and, I had reaſon to fear, treacherous. After this I ſent my boat to ſound, they had firſt forty, and at laſt twenty fathom water: we followed the boat and came to anchor about a quarter of a mile from the ſhore, in twenty-ſix fathom water, fine black ſand and ooze, and there rode right againſt the mouth of a ſmall river, where I hoped to find freſh water. Some of the natives ſtanding upon a ſmall point at the river's mouth, I ſent a ſmall ſhot over their heads to fright them, which it did effectually. In the afternoon, I ſent my boat aſhore to the natives, who ſtood upon the point by the river's mouth, with a preſent of cocoa-nuts: when the boat came near the ſhore, they came running into the water, and put the nuts into the boat; then I made a ſignal for the boat to come on board, and ſent both it and the yawl into the river to look for freſh water; ordering the pinnace to lie near the river's mouth, while the yawl went up to ſearch. In an hour's time, they returned on board with

barrecoes full of freſh water, they had taken up about half a mile up the river; then I ſent them again with caſks, ordering one to fill water, while the other watched, leſt the natives ſhould make any oppoſition, but all was quiet, and a little before ſunſet the boats returned with a ton and a half of water, and the next day, by noon, brought on board about ſix tons of water.

I ſent aſhore commodities to purchaſe hogs, yams, and other roots: but my men returned without any, the natives being unwilling to trade with us, tho' they admired our hatchets and axes, but would part with nothing but cocoa-nuts, which they climbed the trees for, and, ſo ſoon as they gave them to our men, beckoned to them to be gone, for they were afraid of them. The 18th I ſent both boats again for water, and before noon all the caſks were filled. In the afternoon I ſent them to cut wood; but ſeeing about forty natives ſtanding on the bay, at a ſmall diſtance from our men, I made a ſignal for them to come on board again; which they did, and told me the men were paſſing that way, but were afraid to come near them. At four o'clock both boats were ſent for wood, and returned in the evening. Then I called my officers, to conſult, whether it was convenient to ſtay here longer, and endeavour to get a better acquaintance with theſe people, and they all gave their opinions for ſtaying longer: ſo the next day I ſent both boats aſhore to fiſh, and cut more wood. While they were aſhore thirty or forty men and women paſſed by; at firſt they were a little afraid of our people, but, upon making ſigns of friendſhip, they paſſed quietly; the men were dreſſed very fine with feathers about their heads, and lances in their hands; the women had no ornaments, nor any thing to cover their nakedneſs, but a bunch of

green

green boughs before and behind, ſtuck under a ſtring, which came round their waiſts, they carried large baſkets on their heads full of yams. And among all the wild nations I have known, I have obſerved, the women carry the burdens, while the men walk before carrying only their arms. In the afternoon the boats went aſhore for wood, and ſome of our men going to the natives houſes, found them more ſhy than before, having taken down all the cocoa-nuts from the trees, and driven away their hogs: our people making ſigns to know what was become of the hogs and other things, the natives pointing to ſome houſes at the bottom of the bay and imitating the noiſe of thoſe creatures, ſignified, there were hogs and goats of ſeveral ſizes, which they expreſſed by holding their hands at ſeveral diſtances from the ground.

At night our boats came aboard with wood, and the next morning I went myſelf with both boats to the watering place up the river, carrying ſuch triffles as I thought moſt proper to induce them to a commerce with us; but I found they were very ſhy. I ſaw but two men and a boy: one of the men was perſuaded by ſome ſigns to come to the boats ſide: I gave him a knife, and a ſtring of beads, and a glaſs bottle; the fellow called out Cocoa, Cocoa, pointing to a village hard by; and ſignified he would go for ſome, but he never returned. I took eight or nine men with me, and marched to their houſes, whlch were very mean, the doors made faſt with withes, and the inhabitants withdrawn for fear. I viſited three of their villages, but finding the houſes abandoned by the inhabitants, I brought out ſome ſmall fiſh-nets, in recompence for thoſe things they had from us. On our return, we ſaw two of the natives, ſhewed them the things we carried with us, and called to them

Cocoa, Cocoa, to let them know we had taken thoſe things, becauſe they had not made good what they had promiſed by their ſigns, and by calling out cocoas. While I was thus employed, the men in the yawl filled two hogſheads of water and all the barbarrecoes. In the afternoon I came on board, and found all my officers and men very importunate to go to the bay where the hogs were ſaid to be. I was loath to yield to it, fearing they would deal too roughly with the natives: but at laſt conſented, ſending thoſe commodities I had aſhore with me in the morning, and giving them a ſtrict charge to act cautiouſly for their own ſecurity. The bay I ſent them to, was about two miles from the ſhip; and I got all things ready to aſſiſt them with my great guns, if there was occaſion. When they came to land, the natives appeared, ſhaking their lances and threatening them; and ſome were daring enough to wade into the ſea, holding a target in one hand and a lance in the other. Our men held up ſuch commodities as I had ſent, but to no purpoſe; for the natives waved them off. My men, ſeeing they could not be prevailed upon, and being reſolved to have ſome proviſions, fired ſome muſquets to ſcare them away; which had the deſired effect upon all but two or three, who ſtood ſtill in a manacing poſture, till the boldeſt of them dropt his target and ran away, being ſhot in the arm. He and ſome others, felt the ſmart of out bullets, but none were killed, our deſign being rather to fright than hurt them. Our men landed and found abundance of tame hogs running among the houſes; and ſhot nine, which they brought away. They had but little time, for in leſs than an hour after they went, it began to rain; therefore they got what they could into the boats; for I had charged them to come away if it rained. By the time the boats were on

board

board and the hogs taken up, it cleared up; and my men desired to make another trip before night; I consented, giving orders to repair on board before night. In the close of the evening they returned with eight hogs more, and a little live pig; by this time the other hogs were jerked and salted; but these last were only dressed and corned till morning, and then both boats went ashore for more refreshment of hogs or roots, but the the natives had conveyed away their provisions of all sorts in the night. Many of them were now about the houses and none of them offered to hinder our men landing; but, on the contrary, were so amicable, that one man brought ten or twelve cocoa-nuts, left them on the shore, after he had shewed them to our men and went out of sight. Our men finding nothing but nets and images, brought them away. I ordered the boatswain to take care of the nets, the images I took into my own custody.

In the afternoon I sent the canoe they had brought off with them, to the place from whence she came, and in her two axes, two hatchets, six knives, six looking-glasses, a large bunch of beads and four glass bottles. Our men drew the canoe ashore, placed the things in her to the best advantage, and came off in the pinnace I sent to guard them: and now being well stocked with wood and all my water casks full, I resolved to sail the next morning. All the time we stayed here, it was fair, only a shower of rain sometimes in the afternoon, which lasted not above an hour at most, and some thunder and lightning, with very little wind. We had sea and land breezes, the former between the S. S. E. and the latter from N. E. to N. W. This place, I named Port Mountague, in honour of my noble patron: it lies in 6°. 10' S. lat. and meridian distance from Cape St. George one hundred and fifty one miles west: the

country is mountainous and woody, full of rich villages and pleaſant freſh water brooks: the mould in the vallies is deep and yellowiſh, on the ſides of the hills of a very brown colour, and not very deep and rocky underneath, yet excellent planting land. The trees, in general, are neither very ſtrait, thick, nor tall, yet appear green and pleaſant enough; ſome bore flowers, ſome berries, and others big fruits, but all unknown to any of us. Cocoa-nut trees thrive very well here, both on the bays by the ſea ſide, and more remote among the plantations; the nuts are of an indifferent ſize; the milk and kernel very thick and pleaſant. Here is ginger, yams and other very good roots for the pot, that our men ſaw and taſted. What other fruits or roots the country affords, I know not. Here are hogs and dogs; other land animals they ſaw none. The fowls we ſaw and knew, were pigeons, parrots, cockadores, and crows, like thoſe in England, a ſort of birds about the ſize of a black bird, and many ſmaller birds; the ſea and rivers abound with fiſh; we ſaw abundance of cavellies, yellow tails, and whiprays, tho' we catched but few.

We ſailed March the 22d. On the 24th in the evening, about ten o'clock, being much indiſpoſed, I was called out of my cabin, to ſee what the ſhip's crew called a miracle. On the N. W. by W. there appeared a large pillar of fire, ſhooting gradually for three or four minutes, then ſinking in the ſame time, till it was ſcarce viſible; then riſing again and blazing as before. I knew immediately it muſt be a vulcano or burning mountain, and ſteered accordingly for it. On the 25th in the evening, we found ourſelves within three leagues of the iſland, whereon this burning mountain was, and about two leagues from the continent: there was a good channel and we paſſed between them, keeping nearer the main

than

than the iſland. About ſeven in the evening I had fifty two fathom, fine ſand and ooze; then ſtood to the northward to get clear of this ſtreight, having but little wind and fair weather. The vulcano vomited fire and ſmoke all night, and at every exploſion, we heard a dreadful noiſe like thunder, and ſaw a flame of fire after it, the moſt terrifying I ever beheld: the intervals between the exploſions were about half a minute, more or leſs; the irruptions were not alike, ſome were but faint convulſions, in compariſon of the more vigorous; for even the weakeſt vented a great deal of fire; but the largeſt made a roaring noiſe and ſent up a large flame twenty or thirty yards high: and a ſtream of fire run down the mountain even to the ſhore. From the furrows made by this deſcending fire, in the day time we perceived great ſmokes ariſe, probably from ſulphurous matter thrown out of the funnel at the top, which burned till it was either conſumed or extinguiſhed, ſent forth more or leſs ſmoke, according to the quantity of matter diſcharged. But the next night, being ſhot to the weſtward of the burning iſland, and the funnel of it lying on the ſouth ſide, we could not diſcern the fire there, as we did the ſmoke in the day, when we were to the ſouthward of it. This vulcano lies in the lat. of 5°. 33 S. and its meridian diſtance from Cape St. George is three hundred and thirty two miles weſt. The eaſt part of New Guiney lies forty miles to the weſt of this tract of land: in moſt of the charts, they are laid down as contiguous, but I found a large paſſage between them, calling the N. E. promontory of New Guiney, K. William's Cape; when I had perfectly diſcovered the iſland, I called it Nova Britannia. It lies from 2° 30' to 6° 30' S. lat. and has about 5° 18' lon. It appears to be moſtly high land, mixed with valleys, and every

where abounding with large and ſtately trees. The iſland ſeems to be fully inhabited by a race of ſtrong, well made negroes, with whom I could enter into no correſpondence, becauſe my pinnace was in ſuch a condition, that we could not ſafely make uſe of it to go aſhore. I likewiſe diſcovered another iſland, about eleven or 12 leag. long, which I called Sir George Rooke's iſland; and not long after another, which from its form, I named Crown iſland; and to the N. W. of that, we diſcovered a ſtill larger iſle, which I called Sir Robert Riche's iſland. On April 2d we diſcovered another burning iſland, and ſoon after many other iſlands, among which were three veſſels with ſails; a thing unuſual, and what we had not ſeen ſince we came upon theſe coaſts. On April 12th, the ſky looked very red in the eaſt, at ſun riſing, near the horizon, with many black clouds to the S. and N. of it. About a quarter of an hour after ſun riſe, there was a ſquall to the windward of us, when, on a ſudden, one of our men on the forecaſtle called out, that he ſaw ſomething aſtern, but could not tell what it was. I looked out, and ſaw a ſpout beginning to work within a quarter of a mile of us, exactly in the wind: we preſently put right before it, and it came very ſwift, whirling the water up in a pillar, about ſix or ſeven yards high. As yet I could not ſee any pendulous cloud, from whence it might come, and was in hopes it would ſoon loſe its force; but in four or five minutes, it came within a cable's length of us and paſſed away to leeward; and then I ſaw a long pale ſtream coming down to the whirling water, about the bigneſs of the rain bow; the upper end ſeemed vaſtly high, not deſcending from any cloud; and therefore the more ſtrange, as I had not ſeen the like before; paſſing about a mile to leeward of us, it then broke; tho' this was a ſmall ſpout, not

ſtrong,

ſtrong, nor laſting, yet I perceived much wind in it, as it paſſed by us. The current ſtill continued at N. W. a little weſterly, which I allowed to run a mile per hour; from hence I gueſs that the land is disjoined here, and that there is a paſſage to the ſouthward.

CHAP. XLII.

The author diſcovers the iſlands of Miſacomby, Pentare, &c. continues his voyage to Batavia and from thence by the Cape of Good Hope to the iſland of Aſcenſion where the ſhip ſprings a leak and ſinks, and he returns to England in the Canterbury Eaſt Indiaman.

WE were now returning, and therefore I ſhall be ſhorter in my account. On the 26th of April we ſaw the iſland of Ceram, and endeavoured to paſs between it and the iſland of Bonao: but could not. We then made the iſland of Bouro, where we met with a Chineſe veſſel, which, thro' a miſtake, gave us a good deal of trouble; for about ſeven at night, ſhe came cloſe by us on our weather ſide; which occaſioned our getting all guns ready, matches lighted, and ſmall arms upon the quarter deck; but ſhe ſtanding one way and we another, we were ſoon far enough aſunder. At ten the next morning, having little wind, I ſent the yawl on board her. She was laden with rice, arrack, tea, porcelane, and other commodities for Amboyna. The commander ſaid his boat was gone aſhore for water, and aſked our men if they ſaw her; for ſhe had been miſſing two or three days, and they knew not what was become of her. They had their wives and children on board with them, and probably came to ſettle at ſome new Dutch factory.

The

The commander alſo informed us, that the Dutch had lately ſettled at Ampulo, Monippe, Bonao, and on a point of Ceram. The next day we paſſed between Killan and Bouro; after this, we had, for ſeveral days, an high rolling ſea, occaſioned more by currents than winds, which carried us twenty five miles to the ſouth of our true courſe. We were now on the coaſts of a known country; and therefore I reſolved to take the firſt opportunity that offered of putting into port, in order to procure ſuch neceſſaries as I wanted, and for making the repairs requiſite in my ſhip, which by being ſo long out, was now become very foul and crazy, tho' we did not, at that time, ſuſpect her of being in ſo ruinous and rotten condition, as we afterwards found her; neither was it long before we met with the opportunity we wiſhed for.

On the 14th we diſcovered the iſland Miſacomby; and the next day ſailed along to the weſt, on the north ſide of the iſland. In ſome charts it is called Omba, a mountainous iſland, diverſified with woods and ſavannahs, about twenty leagues long and five or ſix broad; we ſaw no ſigns of inhabitants on it. We fell in to the weſt end of it, and therefore I choſe to paſs on, intending to get thro' to the ſouthward, between this and the next iſland to the weſt of it, or between any other two iſlands to the W. where I ſhould find the cleareſt paſſage, becauſe the winds were now at N. E. and E. N. E. and this iſle lies nearly E. and W. ſo that if the winds continued, I might be a long time in getting to the E. end of it, which I knew to be the beſt paſſage. In the afternoon, being near the end of the iſle Pentare, which lies W. from Miſacomby, we ſaw many houſes and plantations in the county, and abundance of cocoa nut trees growing by the ſea-ſide. We alſo ſaw ſeveral boats ſailing croſs a

bay

bay or channel at the weſt end of Miſacomby, between it and Pentare. We had but little wind at north, which blew right in with a ſwell, wherefore I was afraid to venture in, tho' probably there might have been good anchoring, and a means of acquiring a commerce with the natives. I continued ſteering to the weſtward, becauſe, the night before at ſun ſetting, I ſaw a ſmall, round high iſland to the weſt of Pentare, where I expected a good paſſage. We could not that day reach the weſt end of Pentare, but ſaw a deep bay to the weſt of us, where, I thought there might be a paſſage between Pentare and Laubana; but the lands were ſhut within one another, ſo that we could not ſee any paſſage. I ordered them to ſail ſeven leagues more weſterly, and lie by till next day: in the morning we looked out for an opening, but could ſee none; yet by the bearing and diſtance of an high, round iſland, called Potoro, we were got to the weſt of the opening, but not far from it. I therefore tacked, and ſtood to the eaſt; and the rather, becauſe I had reaſon to ſuppoſe this to be the paſſage I came thro' in the Cygnet, in my voyage round the world; but I was not yet ſure of it, becauſe we had rainy weather, ſo that we could not now ſee the land ſo well as we did then; for we accidentally ſaw the opening at our firſt falling in with the iſlands, which now was a work of time and difficulty to diſcover; however, before ten o'clock, we ſaw the opening. The wind being S. S. W. we plied to get thro' before night; for we found a good tide helping us to the ſouthward. About ſeven or eight leagues weſt of us, we ſaw an high, round, peeked mountain, from the top of which a ſmoke ſeemed to aſcend, as from a vulcano. There were three other very high peeked mountains, two on the eaſt and one on the weſt of that which ſmoked. It was twelve at night

night before we got clear of two other ſmall iſlands, and had a very violent tide ſetting us thro' againſt a brik gale of wind. When we were thro', we continued our courſe for Timor, in ſight of which we came on the 18th of May. On the 23d of June we ſaw the ſtreights of Sunda, and towards the latter end of the month, we arrived ſafely in the road of Batavia.

I ſtaid at Batavia upwards of three months, where I firſt ordered the ſhip to be repaired, and afterwards found it neceſſary to careen her; for which purpoſe, I hired veſſels to take in our guns, ballaſt, proviſions, and ſtores. While we lay here, we heard ſeveral reports of our men of war that were cruiſing on the coaſt of India; and there was likewiſe much talk of pirates, who had committed great depredations on the coaſt, particularly in the ſtreights of Malacca. I did not hear of any ſhips ſent out to reduce them. At my firſt coming in, I was told, that two ſhips had been ſent from Amboyna in queſt of me, which was quickly confirmed by one of the ſkippers, I met with here by accident. He told me they had three proteſts againſt me; that they came to Pulo Sabuda, on the coaſt of N. Guiney, twenty eight days after my departure from thence; went as far as Scouten's iſland, but, hearing no further news of me, returned. Something to the ſame purpoſe Mr. Merry, commander of the Fleet frigate, told me at my firſt arrival here; and that the general at Batavia had a copy of my commiſſion and inſtructions; but I looked upon this as very improbable. However, I did not give myſelf much trouble about theſe things, well knowing, that the better they were acquainted with the authority by which I was protected, the leſs ready they would be to offer me any injury. The Dutch during the time we lay here, came to a reſolution of ſending three

ſhips

ſhips to Europe ſooner than uſual. The day fixed for their ſailing was the 16th of October, and I took all proper precautions to be ready to ſail at the ſame time: accordingly, on the 17th of the ſame month, I ſailed from Batavia, having the advantage of a fair wind at ſouth; ſo that on the 19th at noon, I fetched up the three Dutch ſhips before mentioned November the 29th in the morning, we ſaw a ſmall hawk flying about the ſhip, till it was quite tired; then ſhe reſted on the mizen top ſail yard, where we caught her: tis probable ſhe was blown off from Madagaſcar, by the violent northerly winds; for that was the nigheſt land to us, tho' near one hundred and fifty leagues diſtant. The 30th of Dec. we arrived at the Cape of Good Hope, and departed again Jan. 11th 1701.

About the end of the month, we ſaw abundance of weeds or blubber ſwim by us; for I can't determine which; it was all of one ſhape and colour, and ſeemed, as it floated on the water, to be about the breadth of a man's palm, ſpreading out in branches about the bigneſs of a man's fingers; in the middle was a little knob no larger than the top of a man's thumb, of a duſky colour, and appeared to be no ſtronger than a kind of jelly: theſe ſort of things are frequent in theſe ſeas and in moſt parts of the Eaſt Indies. Sharks are not very common here, but I have ſeen ſome off the iſland of Timor; and in our return one was ſeen under the ſtern of our ſhip, which, in the opinion of all the ſhips crew, was the largeſt by much we had ever ſeen. Our ſhip, after all the care that had been taken, appeared to be ſtill leaky; but we were in hopes of meeting with an opportunity at St. Helena, to diſcover the cauſe of our misfortune, and find ſome means to remedy it: in which, however, we were diſappointed; tho' as much care was taken by the

ſuperior

ſuperior officers, as it was poſſible for men to take in their ſtations.

February the ſecond, we anchored in St. Helena road; and ſailed again from thence the thirteenth. On the 21ſt we made the iſland of Aſcenſion, and ſtood in towards it. The 22d between eight and nine o'clock, we ſprung a leak, which increaſed ſo faſt that the chain pumps could not keep the ſhip free; whereupon I ſet the hand pumps to work alſo, and by ten o'clock, ſucked her: then wore and ſtood to the ſouthward to try if that would eaſe her, and then the chain pump juſt kept her free. At five the next morning, we made ſail, ſtood in for the bay, and at nine, anchored in ten fathom and an half, ſandy ground; the ſouth point bearing S. S. W. two miles, and the north point of the bay N. E. half N. two miles: as ſoon as we anchored, I ordered the gunner to clear the powder-room, that we might there ſearch for the leak, and endeavour to ſtop within board, if poſſible, for we could not heel the ſhip ſo low, it being within four ſtreaks of the keel; neither was there any convenient place to hale her aſhore; by the aſſiſtance of the boatſwain, the powder-room was cleared by ten o'clock. The carpenter's mate, gunner and boatſwain went down, and ſoon after I followed them, and aſked whether they could come at the leak, they ſaid they believed they might, by cutting the ceiling. I told the carpenter's mate, who was the only perſon in the ſhip, that underſtood any thing of carpenters work, that, if they could come at the leak by cutting the ceiling without weakning the ſhip, he might do it (for he had ſtopped one leak before, tho' not ſo big as this) wherefore I left him to do his beſt. The ceiling being cut, they could not come at the leak, for it was againſt one of the foothook-timbers, which, the caapenter's mate ſaid

he

he muſt firſt cut before he could ſtop it. I went down again, and found the water came in very violently, I told them, I had never known any ſuch thing as cutting timbers to ſtop leaks, but if they, who ought to be the beſt judges in ſuch caſes, thought they could do any good, I bid them uſe their utmoſt care and diligence, promiſing I would always be a friend to the carpenter's mate, if he could and would ſtop it: he ſaid by four o'clock in the afternoon he would make all well, being then about eleven in the forenoon. In the afternoon my men were all employed in pumping with both pumps, except ſuch as aſſiſted the carpenter's mate. About one in the afternoon I went down again; and the carpenter's mate was cutting the after part of the timber over the leak. I deſired him to get every thing ready for ſtopping the violence of the water, before he cut away further, for fear it ſhould overpower him at once; accordingly, all the carpenter's oakam, all the boatſwain's waſte cloaths, and my own bed-cloaths were ſent down for that purpoſe, and ſtancheons were prepared to reach from the deck to whatever was laid over the leak. The maſter carpenter ſaid he could not tell what was beſt to be done, till the leak was all open; ſo deſiring they would uſe their utmoſt endeavours, I went up and left them. About five o'clock, the boatſwain came to tell me the leak was encreaſed, and that it was impoſſible to keep the ſhip above water; when I expected to have heard the leak was ſtopped. I preſently went down, and found the timber cut away; but nothing in readineſs to ſtop the force of the water from coming in. I aſked why they cut the timber, before they had got all things in readineſs. The carpenter's mate anſwered they could do nothing before the timber was cut, that he might take dimenſions of the place; and

that

that the carpenter's boy was preparing a chuck, I ordered them to ſtop in oakam and ſome pieces of beef, in the mean time, but all to little purpoſe, for now the water ruſhed in with ſuch violence, notwithſtanding all our endeavours to check it, that the room was now overflowed two feet deep: then I ordered the bulkhead to be cut open, to drain the room, and to clear away abaft the bulkhead, that we might bale; ſo that now we had two pumps going, and as many baling as could; by which means the water began to decreaſe, and gave me ſome hopes of ſaving the ſhip; and the carpenter's mate ſaid he would engage to ſtop the leak by ten o'clock at night. Then I left them, and putting a good countenance upon the matter, encouraged my men to pump and bale briſkly, and occaſionally gave them ſome drams to comfort them. About eleven o'clock the boatſwain told me the leak ſtill increaſed, and the plank was ſo rotten, it broke away like dirt; and that now it was impoſſible to ſave the ſhip, for they could not come at the leak, the water being got above it in the room. The reſt of the night we ſpent in pumping and baling. I worked myſelf, to encourage my men who were very diligent; but the water ſtill gaining upon us, we now thought of nothing but ſaving our lives; wherefore I hoiſted out the boat, to be ready in caſe the ſhip ſhould ſink, and in the morning we weighed anchor and warped in nearer the ſhore, tho' we did but little good.

In the afternoon, with the help of a ſea-breeze, I ran into ſeven fathom, and anchored; then carried a ſmall anchor aſhore, and warped in till I came within three fathom and an half, where having faſtened her; I made a raft to carry the men's cheſts and bedding aſhore. In the morning I ordered the ſails to be unbent to make tents, and then went

aſhore

aſhore with the officers. I had ſent aſhore a puncheon and a thirty-ſix gallon caſk of water, with one bag of rice, for our common uſe; but great part of it was ſtolen away before I came aſhore, and many of my books and papers loſt. On the twenty-ſixth following, we, to our great comfort found a ſpring of freſh water, about eight miles from our tents, beyond a very high mountain, which we were forced to paſs over: ſo that now we were, by God's providence, in a condition of ſubſiſting for ſome time, having very good turtle by our tents and water for fetching.

The next day I accompanyed moſt of my officers to the watering place: we lay by the way all night, and the next morning got thither, where we found a very fine ſpring on the S. E. ſide of the high mountain, about half a mile from the top; but the continual fogs made it ſo cold here, that it was very unwholſome living by the water. Near this place are abundance of goats and land crabs: about two miles S. E. from the ſpring we found three or four ſhrub-trees, upon one of which was cut an anchor and cable, with the year 1642: about half a furlong from theſe, we found a convenient place for ſheltering men in any weather: hither many of our men reſorted, the hollow rocks affording convenient lodging. The goats, land crabs, men of war birds, and boobies, are good food, and the air proved here exceeding wholeſome. About a week after our coming aſhore, our men, that lived at this new habitation, ſaw two ſhips making towards the iſland; before night they brought me the news; and I ordered them to turn about a ſcore of turtles for theſe ſhips, if they ſhould touch here; but, before morning they were out of ſight, and the turtles were releaſed again. Here we continued till April 2, without ſeeing any other

ſhip; then we ſaw eleven ſail to windward of the iſland; but they likewiſe paſſed by. The day after appeared four ſail, which came to anchor in the bay: being his Majeſty's ſhips the Angleſey, Haſtings, and Lizard, and the Canterbury Eaſt-India ſhip. I went on board the Angleſey, with about thirty-five of my men, and the reſt were diſpoſed of into the two other men of war.

After this happy eſcape, we left the iſland Aſcention on the 8th of March, and arrived ſafely at Barbadoes on the 8th of May, 1701. Thro' the deſire I had of returning to England, and to vindicate my character, which I knew muſt ſuffer greatly from the unlucky accident that had befallen me, I took the firſt opportunity that offered of returning in the Canterbury Eaſt-indiaman, in which paſſage I met nothing material. The ſame earneſt deſire to clear up miſtakes, to do myſelf juſtice in the opinion of the world, and to ſet the diſcoveries made in this unfortunate voyage in their proper light, that it may be of uſe to the world, how unlucky ſoever it proved to me, is the reaſon that induced me to publiſh it; and I perſuade myſelf that thoſe who are proper judges of theſe ſort of performances, will allow, that I have delivered many things new in themſelves, capable of affording much inſtruction to ſuch as meditate future diicoveries, and which, in other reſpects, may be of great utility to the preſent age, and to poſterity.

Capt.

Capt. DAMPIER's

DISCOURSE

ON

Winds, Breezes, Storms, Seasons of the Year, Tides and Currents of the TORRID ZONE throughout the World

Capt. DAMPIER's

DISCOURSE ON WINDS, &c.

CHAP. I.

Of the GENERAL TRADE-WIND.

The INTRODUCTION.

Of the the general trade-wind at ſea. Of the beſt time of the year to croſs the equinoctial. The winds near the line commonly uncertain, and attended with calms and tornadoes. A reaſon of the winds blowing ſouth near the line, in the Atlantic Sea. How ſhips homeward-bound from the bite of Guinea, ſhould croſs the line. Of the trade-wind in the South Sea, and in the E. Indian ocean.

I Shall reduce what I have to ſay on this ſubject, to ſome general heads; beginning with the trade-winds, as being the moſt remarkable.

Trade-winds are ſuch as blow conſtantly from on point or quarter of the compaſs, and the region of the world moſt peculiar to them, is from about 30 d. north, to 30 d. ſouth of the equator.

There are divers ſorts of theſe winds; ſome blowing from eaſt to weſt, ſome from ſouth to north, others from weſt to eaſt, &c. Some are conſtant in one quarter all the year; ſome blow half the year one way, and the other ſix months quite contrary; and others blow ſix months one way, and then ſhifting only eight or ten points, continue there ſix months more, and then return again to their former

former ſtations, as all theſe ſhifting trade-winds do; and ſo as the year comes about, the alternately ſucceed each other in their proper ſeaſons.

There are other ſorts, called ſea-winds and land-winds, differing much from any of the former, the one blowing by day, and the other by night, conſtantly and regularly ſucceeding each other.

Within the torrid zone alſo are violent ſtorms, as fierce, if not fiercer than any are in other parts of the world; and as to the ſeaſons of the year, I can diſtinguiſh them there, no other way than by *wet* and *dry*; and theſe wet and dry ſeaſons as ſucceſſively follow each other, as winter and ſummer with us.

Here are alſo ſtrong currents, ſometimes ſetting one way, ſometimes another; which though they be hard to deſcribe, with that accuracy which is deſirable, yet I ſhall give as particular an account of them, as alſo of the ſeveral ſorts of winds, as my own obſervations, and the judicious informations from others, will affore me matter to.

Of the General Trade-Wind.

Of all winds before-mentioned, I ſhall endeavour to treat diſtinctly, beginning with the true trade-wind firſt, which I call the general trade-wind at ſea; becauſe all other trade-winds, whether conſtant or ſhifting, ſeem to have their dependence on ſome accidental cauſe; whereas the cauſe of theſe, be it what it will, ſeems uniform and conſtant.

In all theſe ſeas, except juſt under or near the line, they conſtantly blow without intermiſſion, as well to the ſouth, as to the north of the equator, but not with equal force at all times, nor in all latitudes; neither do theſe conſtant trade winds uſually blow near the ſhore, but only in the ocean, at leaſt thirty or forty leagues off at ſea, clear from

any

any land; eſpecially on the weſt coaſt, or ſide of any continent: for indeed on the eaſt ſide, the eaſterly wind being the true trade-wind, blows almoſt home to the ſhore; ſo near as to receive a check from the land-wind; and oft-times to admit of the ſea breeze, by which it is drawn from its courſe frequently four or five points of the compaſs: but of the ſea breeze I ſhall ſpeak in its place. In ſome places, and particularly in the ſouth ſeas, in ſouth lat. the true eaſtern trade is not found to blow within one hundred and fifty or two hundred leagues of the coaſt, but in north lat. in thoſe ſeas, it comes within thirty or forty leagues diſtance of the ſhore; and this I ſhall give as a general rule, That in north lat. theſe winds are commonly at E. N. E. in ſouth lat. at E. S. E.

When we go from England, and are bound to the Eaſt or Weſt Indies, or to Guinea, we commonly find theſe winds in the lat. of 30 d. ſometimes ſooner, as in the latitudes of 32 or 35. And it may ſo happen that we may meet with an eaſterly wind in 40 d. or go out of our own channel with a north eaſt wind; which ſometimes alſo fails us not till we come into a true trade-wind; but this is only accidental, therefore is not the wind I ſpeak of; but between 32 and 28, I never knew nor heard that the true trade-wind failed.

If in coming from England, we have a north eaſterly wind that brings us hither (*i. e.* into the true trade-wind) it ſometimes ſtays at north eaſt, eſpecially if we keep near the African ſhore, as Guinea ſhips do, till we are near the tropick of Cancer, and then comes to the E. N. E. where it ſettles; but it commonly ſettles the re in 28 d. if we are ſo far off ſhore as to receive the true trade. When the wind is thus ſettled, we have commonly fair weather, and a clear ſky, eſpecially if the ſun

is in any ſouthern ſign; but if in a northern ſign, the weather is uſually cloudy.

On the contrary, when we are in ſouth lat. in the Atlantic, if the ſun is in northern ſigns, the ſky is clear, but if in ſouthern ſigns, the ſky is cloudy. This I once experienced to my ſorrow, in my return from Bantam, in rhe year 1671. We had cloudy weather and briſk winds, while we were croſſing the E. Indian ocean; and had a very good paſſage alſo about the Cape of Good Hope, where we had fair clear weather; and ſteering from thence for the iſland St. Hellena, where we thought to water and refreſh, as all our Engliſh E. India ſhips do, we miſt it for want of an obſervation: for before we came to the tropic of Capricon, the ſky was again clouded, ſo that we ſeldom ſaw the ſun or ſtairs, till we were quite paſt the iſland. However, we found the iſle of Aſcention, where we ſtruck two turtle for this was not the laying time, but the beginning of the cooting or ingendering ſeaſon; therefore ſome few only were drawn hither.) This was the latter end of November. From the time that we thought ourſelves to the weſt of St. Hellena, we had our water meaſured out to us, two pints a man per day, till we came into our channel. This was the firſt time that I began to know the value of freſh water; for we took in none in all our way home from Bantam. But ſo much for this digreſſion.

The winds, as I ſaid before, as we run to ſouthward from England, do firſt ſettle in the E. N. E. about the lat. of 28 d. or beſure between that and 24 d. eſpecially when the ſun is to the ſouthward of the line; but in May, June, and July, you will find the winds at E. by S. or E. S. E.

Theſe winds, whether we meet them to the north of the eaſt, or to the ſouth of it, we find blowing

a moderate gale from our firſt meeting them, in 30 or 28 d. till we come the Tropic, there we find the trade ſtonger. It commonly blows a good top-ſail-gale, as we ſail large; and, if we were to ſail on a wind, our lower ſails would be enough.

Theſe briſk gales blow in the Atlantic ocean, and north of the equator, from the lat. of 23 to 12 or 14 conſtantly, between the E. N. E. and the E. but between 10 or 12 d. and the line, they are not ſo freſh nor conſtant to that point; for in the months of July and Auguſt, the ſouth winds do oft times blow even to 11 or 12 d. of north lat. keeping between the S. S. E. and the S. S. W. or S. W. but in December and January the true trade blows within 3 or 4 d. of the equator: and as the ſun returns again to the northward, ſo the ſoutherly winds do increaſe and draw more to the northward of the line, till July, and then gradually withdraw back again towards the line. When the ſun is in the ſouthern ſigns, it is the beſt time of the year to croſs the line, if bound to the ſouthward; for beſides the benefit of the true trade, to bring a ſhip near the line, the water clearer, and the winds which at other times are between the S. S. E. and S. S. W. are now at S. E. or S. E. and by E. but in our ſummer months we find nothing but calms and tornadoes; and tho' tornadoes do uſually riſe againſt the ſettled wind; yet but few commanders will endeavour to take the advantage of the winds that come from them, but rather furl their topſails, hale up their courſes, and lie ſtill till the guſt of wind is paſt, except neceſſity requires haſte; for theſe ſudden tornadoes do not continue long; and beſides are often very violent and fierce, ſo that a ſhip with her ſails looſe, would be in danger to be over-ſet by them, or at leaſt loſe maſts or yards, or have the ſails ſplit; beſides the conſternation that all men muſt needs be in at ſuch

a time, eſpecially if the ſhip, by any unforeſeen accident, ſhould prove unruly, as by the miſtake of the man at helm, or he that conns, or by her broaching too againſt all endeavours, which often happens when a fierce guſt comes; which though it does not laſt long, yet would do much damage in a ſhort time; and tho' all things ſhould fall out well, yet the benefit of it would not compenſate the danger: for it is much if a ſhip ſails a mile before either the wind dies wholly away, or at leaſt ſhifts about again to the ſouth: nor are we ſure that theſe winds will continue three minutes before they ſhift; and ſometimes they fly round faſter than the ſhip will, tho' the helm lies for it; and all ſeamen know the danger of being taken a-back in ſuch weather.

But what has been ſpoken of the ſoutherly winds, calms, and tornadoes, is to be underſtood of the eaſt ſide of the Atlantic, to as far weſt as the longitude of 359 d. or thereabouts; for farther weſterly we find the winds commonly at S. E. even in croſſing the line, and a very briſk gale; it is for that reaſon our experienced Guinea commanders keep to the ſouthward of the line, till they are about that longitude. Some run over nearer the American ſhore before they croſs the line: our Eaſt-India commanders alſo croſs the line, coming from India near the American coaſt, and find briſk gales at S. E. all the times of the year; but going to the Indies, they ſteer away ſouth, from the iſland of St. Jago, where they commonly water and meet the winds in that longitude. But of this enough.

The winds near the line in the Indian ocean and South Sea are different from this, yet there the winds are alſo ſoutherly, and therefore different from what they are farther off, for 2 or 3 d. on each ſide the line, the winds are commonly very uncertain,

uncertain, and oftentimes there are perfect calms, or at leaſt very ſmall winds and ſome tornadoes in the Eaſt-Indian ſea. In the South Seas, near and under the line, the winds are at ſouth 130 leagues off from the ſhore, but how farther off I know not; there the winds are but ſmall, yet conſtant, and the weather clear from March till September; but about Chriſtmas there are tornadoes; yet in both the Eaſt-Indian ſea, and the South Sea; the winds near or under the line, are often at ſouth; yet theſe winds do not blow above 2 or 3 d. to the north or ſouth of the line, except near ſome land; but in the Atlantic ſea, as I have ſaid before, the ſouth and ſouth weſt winds do ſometimes blow even to 10 or 12 d. north of the line. And for the ſouth winds to blow conſtantly near the line in the Atlantic, between Cape Verd in Africa, and Cape Blanco in Brazil, is no wonderful thing, if a man will but conſider thoſe promontories that ſhoot out from the continents on each ſide the ſea; one on the north, the other on the ſouth ſide of the equator, leaving but a ſmall ſpace clear, for the winds to blow in; where there is always a pretty briſk gale, eſpecially on the American ſide. And as within 2 or 3 d. of the equator, it is moſt ſubject to calms and tornadoes and ſmall faint breezes in other ſeas not pend up as this is. So this ſea, except juſt in the very opening between both promontories, is much more ſubject to it than any other, eſpecially on the eaſt ſide: that is from the bite or the inland corner of the coaſt of Guinea to 28 or 30 d. diſtance weſt: but this ſeems not to be altogether the effects of the line, but owing partly to the nearneſs of the land to the line, which ſhoots out from the bite of Guinea, even to Cape St. Ann's, almoſt in a parrallel with the equator (allowing for the bays a bendings) and this is 23 or 24 d. of longitude, and

not

not above 80 leagues from the line in ſome places: ſo that this part of the ſea, between the coaſt of Guinea, and the line or 2 d. ſouth of it lying, as it were, between the land and the line, is ſeldom free from bad weather; eſpecially from April to September; but when the ſun is withdrawn towards the tropic of Capricorn, then there is ſomething better weather.

And in the ſea under the line between the African promontory and the American, it is freer from tornadoes and calms, and more ſubject to fair weather and freſh breezes. Therefore both our Engliſh and Dutch Eaſt-India ſhips, when outward-bound, endeavour to croſs the line as near as they can in the mid channel, between both promontories; and although they meet the winds ſometimes at S. S. E. or at S. S. W. or farther eaſterly or weſterly; yet will they not run above a degree to the eaſt, or a degree to the weſt of the mid channel, before they tack again, for fear of meeting with the ſoaking current on the weſt, or calms on the eaſt ſide; either of which would be alike prejudicial to their courſe.

The Portuguieſe in their voyages to Brazil, take the ſame method, and get to the ſouth of the line before they fall in with the land, for fear of falling to the leward of Cape St. Auguſtine, for there are ſo many things which make that a difficult cape to paſs, that hardly any man would try to do it, but at a diſtance.

But our Guinea ſhips do generally paſs on to their ports on the coaſt of Guinea, at any time of the year, without uſing ſuch methods; becauſe their buſineſs lies moſtly on the north of the line, where they always find a fair weſterly wind. But in their returns from thence, they croſs the line, and run 3 or 4 d. to the ſouthward of it, where they meet

meet the wind between the S. S. E. and the S. S.W. and a briſk gale; with this wind they run away in the ſame parrallel 35 or 36 d. before they croſs the line again to the northward, which is about midway between the extreams of both promontories; there they find a briſk gale, which carries them to the Weſt-Indies, or where they pleaſe. Some run weſt 40 d. before they croſs the line, and find ſtrong gales, whereas ſhould they come from Old Callabar, or any other place in the bite, on the north of the line, and ſteer away weſt, thinking to gain their paſſage the ſooner, becauſe it is the neareſt way, they would doubtleſs be miſtaken, as many men have been: for if they keep near the line, they meet with great calms; and, if they keep near the land, they meet with weſterly winds; and, if they keep in the middle between both, they muſt of neceſſity meet with both inconveniencies, as alſo with tornadoes, eſpecially in May, June, July, and Auguſt

By which means ſome ſhips, if they go any of theſe three ways now cautioned againſt, ſpend more time in going from the Bite to Cape Verd, than another ſhip will do, if it croſs the line in the right places before-mentioned, in going to Barbadoes.

Sometimes unexperienced Guniea maſters in their return from thence, after they have croſſed the line, from N. to S. and are in a fair way to gain a ſpeedy paſſage, will be ſo obſtinate in their opinions, after they have run 26, 28, or 30 d. weſt from Old Callabar (with a fair wind) to ſteer away W. by N. or W. N. W. it being the directeſt courſe they can ſteer for Barbadoes; then muſt of neceſſity keep within a degree of the line, while they are running 2 or 300 leagues, which may prove to be a long time in doing, becauſe of the uncertainty of the winds near the equator; therefore they that croſs

it

it near the middle between both promontories, or near the American coaſt, when they are minded to fall away to the northward, ſteer away N. W. by N. and ſo depreſs or raiſe a degree in running 28 leagues at moſt; therefore (which is beſt) they are but a ſhort time near the equator: and beſides, in thus croſſing it in the middle between both promontories, they ſeldom miſs of a wind: for the wind in theſe ſeas has no other paſſage, but between theſe two promontories.

What I have ſaid already on this head, has been chiefly of the Atlantic, and of that too moſtly about the line, becauſe it is the moſt difficult place to paſs in going to the ſouthward. In other ſeas, as in the Eaſt-Indian Sea, and the Great South Sea there is no ſuch difficulty to paſs any way, becauſe there is ſea-room enough, without coming into ſuch inconveniences, as we meet with in the Atlantic; and as to the winds between the line and the tropics, in the Eaſt-Indian Sea and the South Sea, they are in their latitudes, as I ſaid before, viz. in ſouth latitude, at E. S. E. and in north latitude, at E. N. E. blowing conſtantly freſh breezes, eſpecially in the South Seas, even from within a degree or two of the line, on each ſide to the tropic, or to 30 d. of lat. And this I may truly ſay, that neither the Atlantic nor the Eaſt-Indian Seas have the true trade-winds ſo conſtant nor briſk at all times of the year, and in all latitudes, as they are here. For being once got into the trade, I mean without the verge of the coaſting trade-wind, it blows a very briſk gale all over the ocean. Capt. Eaton experienced this in ſailing from the Gallapagos iſlands to the Ladrones, in the latter end of the year 1685. We had the like experience, ſailing from Cape Corientes to Guam the year after (as appears by my journal of that run, in my voyage round

round the world, vol. 1. p. 417.) And as for the wind to the ſouthward of the line, I had great experience of it in my ramble there with Capt. Shearp; and ſince that Capt. Davis, in his return out of the South Sea, had greater experience; becauſe he took his departure from the Gallapagos iſlands alſo, and ſteering W. S. W. from thence, till he met the true trade at E. S. E. he ſteered directly ſouth, clear from the line, till he got to the ſouthward of the tropic of Capricorn, and ſo quite without the trade.

In the Eaſt-Indian Sea, between the lat. of 30 d. and 4 d. ſouth of the equator, the true breeze is at E. S. E. or S. E. by E. yet not ſo conſtant nor briſk as in the South Seas; beſides that part of it which lies to the northward of the line, has not ſuch conſtant ſteady breezes, but is more ſubject to calms, and near the ſhore to ſhifting winds, according to the ſeaſons of the year.

CHAP. II.

Of the conſtant COASTING TRADE-WINDS.

A parrallel of the ſouth part of Africa and Peru. The trade-winds blow with an accute angle on any coaſt. The winds about Angola and in the South Seas alike; as alſo at Mexico and Guinea. The winds ſhift not in ſome places. Sand blown from the ſhore about Cape Blanco in Guinea. An account of the trade-winds from thence to Cape Lopos.

THE trade-winds, which blow on any coaſt, are either conſtant or ſhifting.

The coaſts that are ſubject to conſtant trade-winds, are, the ſouth coaſt of Africa and Peru, part of the coaſt of Mexico, and part of Guinea.

The

The ſouth part of Africa and Peru, are in one lat. both coaſts tending north and ſouth; both on the weſt ſide of their continents; both in ſouth lat. and tho' they do not lie exactly parrallel, by reaſon of ſome capes or buildings in the land, yet are the winds much alike, on both coaſts, all the year.

On the coaſt of Angola the winds are between the S. W. and S. And on the coaſt of Peru, we reckon them between the S. S. W. and S. S. E. But this the reader muſt take notice of, that the trade-winds that blow on any coaſt, except the north coaſt of Africa, whether they are conſtant, and blow all the year, or whether they are ſhifting winds, do never blow right in on the ſhore, nor right along ſhore; but go ſlanting, making an accute angle of about 22 d. Therefore as the lands tends more eaſterly or weſterly from the north or ſouth on theſe coaſts, ſo the winds alter accordingly; as for example, where the land lies N. and S. the wind would be at S. S. W. but where the land lies S. S. W. the trade would be at S. W. But, if the land lies S. S. E. then the wind would be at ſouth. This is ſuppoſed of coaſts lying on the weſt ſide of any continent, and on the ſouth ſide of the equator, as the two coaſt of Africa and Peru are; but the north part of Africa has the trade blowing off from the ſhore, two or three points.

Theſe ſoutherly winds blow conſtantly all the year, on both the coaſts of Peru and Africa; they are briſk, and blow farther off from the coaſts than any ſhifting winds.

On the coaſt of Peru, theſe winds blow 140 or 150 leagues off ſhore, before you can perceive them to alter; but then as you run farther off, ſo the wind will come about more eaſterly, and at about

about 200 leagues diſtance it ſettles at E. S. E. which is the true trade.

Between Angola and Brazil, the winds are much as they are in the South Seas, on the weſt ſide of the Peruvian coaſt; only near the line, within 4 d. of it, in ſouth lat. the wind holds in the S. S. W. or S. W. for 28 or 30 d. of longitude, and ſo it may in the ſame lat. in the South Seas, for ought I know; for it was at ſouth, as far as any of us were, which was near two hundred leagues.

As the coaſts of Peru and Angola have their conſtant trade-winds, ſo has the coaſt of Mexico and Guiney. And as the coaſt of Peru lies north and ſouth, ſo thoſe lie neareſt eaſt and weſt. According to the courſe of the general trade the winds ſhould be eaſterly on theſe coaſts; but here we meet with the contrary; for from the lat. of 10 d. N. 20d. N. on the coaſt of Mexico, the winds are conſtantly near the weſt on all the coaſt, except check'd ſometimes with tornadoes, which commonly riſe againſt the wind; the ſame is obſerved on the coaſt of Angola, where there are tornadoes alſo; but the coaſt of Peru is not ſubject to any, yet on that coaſt there are ſometimes calms two or three days together off of the bay of Arica, between the lat. of 16 and 23. In the lat. of 19, you ſhall have calms thirty or forty leagues off ſhore, but not ſo far on either ſide the bay, neither are ſuch calms uſual on the coaſts of Angola and Mexico only after a tornado, as is common in other places.

As the coaſts of Angola and Peru, do in moſt things run parallel each with other; ſo do the coaſts of Mexico and Guiney; and if I am not miſtaken, the winds on both theſe coaſts are much alike; both theſe coaſts begin at the bite or bending of the land, where the other two parallel lands end; for as the Mexican continent begins at or near Panama, which

is eight or nine degrees north of the equator; ſo that part of Guiney, which I ſpeak of, begins about Old Callabar, in about four or five degrees of north latitude.

The land tends away weſterly from both theſe places ſome hundreds of leagues; and though not on one point of the compaſs, becauſe of the ſmall points, bays and bending in the land, yet the winds that on more regular ſhores, keep their conſtant courſe, and blow in upon the ſhore, about two points from the ſea, do alſo here on the Guiney coaſt, blow on the ſhore from the weſt quarter, and as the land lies pointing in on the ſhore, even from Cape Mount to Old Callabar, which is above four hundred leagues; and that with ſuch conſtancy that the eaſt part of that coaſt is called the leeward coaſt, and the weſt part the windward coaſt; and yet this is ſo contrary to the general opinion of ſeamen, concerning the courſe of the winds, that nothing but their own experience will convince them of the truth of it; for thus they generally reaſon; Barbadoes is the eaſtermoſt of the Carribee iſlands, therefore the reſt are ſaid to be to leeward of it, and ſo of any other iſland; as indeed it uſually holds true, becauſe the winds there are commonly at eaſt; but this counter wind on the coaſt of Guiney aſtoniſhes moſt ſeamen that have ſeen nothing like what they meet here. There are other coaſts where the winds ſhift very little as on the coaſt of Carraccas, and the ſouth ſide of the bay of Mexico, *i. e.* in the bay of Campeachy, and all the Carribee iſlands. Indeed there may be ſometimes ſome ſmall flirts of a weſterly wind on theſe coaſts, but neither conſtant, certain nor laſting.

And indeed this was the great ſtumbling block that we met with in running from the Gallipagos Iſlands for the iſland Cocos, mentioned in Vol. I. page 244. But

But that part of Africa, which lies between Cape Verd in 14 d. north, and Cape Bajedore in 27 d. has commonly northerly winds, or between the N. and N. E. very freſh gales; therefore our Guiney ſhips, bound to guiney, ſtrive to keep near that ſhore, and oft-times make the Capes: and being to the ſouthward of Cape Blanco, which lies in lat. about 21. they are ſometimes ſo troubled with the ſand, which the wind brings off ſhore, that they are ſcarce able to ſee one another: their decks are all ſtrewed with it, and their ſails all red, as if they were tann'd, with the ſand that ſticks to them, it being of a reddiſh colour.

From Cape Verd to Cape St. Ann's, which is about ſix degrees north, the trade is between the E. and S. E. from Cape St. Ann's to Cape Palmas, in about 4 d. north, the trade is at S. W. from Cape Palmas to the Bite of Guiney, which is at the bending of the coaſt, the wind is at W.S.W. from this bending the land begins to turn about to the ſouth; and from thence to Cape Lopos, which is to the ſouth of the line, the trade is at S. S. W. as it is on all that coaſt, even to 30 degrees ſouth.

This laſt account I had from Mr. Canby, who has made many voyages to Guiney.

CHAP. III.

Of the COASTING TRADE-WINDS *that ſhift.*

The coaſts where the winds ſhift. Of the winds between Gratia de Dios, and Cape La Vela. Of thoſe on the coaſt of Brazil: At Panama: About Natal, and Cape Corientes, and the Red Sea: From the Gulph of Perſia to Cape Comorin. Of the monſoons in India; their benefit for ſailing from place to place. Sea and land breezes ſerviceable for the ſame purpoſe. By what helps long voyages are made in an open ſea.

THE coaſts where the winds uſually ſhift, are ſome in the Weſt Indies, on that part of the coaſt between Cape Gratia de Dios, and Cape la Vela chiefly; the coaſt of Brazil; the Bay of Panama in the South Seas, and all the coaſt of the Eaſt Indies, even from the river Natal, which is in the lat. of 30 d. ſouth, on the eaſt ſide of Africa, beyond the Cape of Good Hope, to the north eaſt parts of China, comprehending all the bays between. The iſlands alſo have their annual changes; of theſe I ſhall treat in their order, beginning firſt with that coaſt which lies between Cape Gratia de Dios, and Cape la Vela; and I the rather begin with this part firſt, becauſe this part of the Weſt Indies is all that is ſubject to change; neither is the change altogether ſo orderly or certain as the monſoons in the Eaſt Indies, or the ſhifting winds on the coaſt of Brazil.

The common trade-wind on this coaſt is between the N. E. and the E. this trade blows conſtantly from March till November, but is often checked with tornadoes in the months of May, June, July and Auguſt, eſpecially between the river of Darien and Coſtarica; but to windward there is a more ſerene air, and a briſker wind. From October till March

March there are weſterly winds, not conſtant nor violent, but blowing moderately ſometimes two or three days or a week; and then the breeze may blow again as long. Theſe winds are moſt in December and January; before and after theſe two months the trade-wind is only checked a day or two near the full or change of the moon; and when the weſterly winds blow longeſt and ſtrongeſt on the coaſt, the eaſterly trade-wind blows off at ſea, as at other times. Near Cape la Vela, the true trade blows within eight or ten leagues off the ſhore, when the weſterly winds blow on the coaſt, except in a ſtrong north, which turns the trade-wind back, and on the Coſtarica, and between it and the river Darien the weſterly winds, as they are more frequent and laſting, than towards Cape la Vela, ſo alſo they blow farther off at ſea, ſometimes as far as to twenty or thirty leagues from the ſhore.

Therefore ſhips bound to windward, if they have far to go, either take the opportunity of the weſterly wind ſeaſon, or elſe go through the Gulph of Florida, and ſtretch away to the north, till they get into a variable winds way, and then run to the eaſtward as far as they think convenient before they ſtretch to the ſouthward again. All that are bound from the Weſt Indies to Guinea muſt take this courſe, if they ſail from Jamaica (becauſe they muſt paſs thro' the Gulph of Florida) but from other iſlands they may ſtretch away directly to the north, and uſe the ſame method.

But if ſhips have only a ſmall way to ſail to windward, they make uſe of the ſea and land breezes, making no account of the time of the year.

The winds on the coaſt of Brazil, are from September till March at E. N. E. and from March till September again they are at ſouth.

The winds in the bay of Panama are from September till March eaſterly, and from March till September again they are at S. and S. S. W.

From the Cape of Good Hope eaſtwards, as far as the river Natal, which lies in 30 d. ſouth latitude, and Cape Corientes in lat. of 24 d. ſouth the winds from May to October are conſtantly from the weſt to the north weſt, within thirty leagues of the ſhore: They blow hardeſt at north weſt. When the wind comes to the north weſt, it is commonly ſtormy and tempeſtuous weather, attended with much rain, and then the weather is cold and chilly. From October till March the winds are eaſterly; from the E. N. E. to the E. S. E. you have then very fair weather: the E. N. E. winds are pretty freſh, but the winds at E. S. E. are ſmall and faint, ſometimes affording ſome drops of rain.

From Cape Corientes to the Red-Sea, from October till the middle of January the winds are variable, but moſt times northerly, and oft ſhifting round the compaſs. The ſtrongeſt winds are at north; theſe are often very violent and ſtormy, and accompanied with much rain, and thus it blows about the iſland of Madagaſcar and the adjacent iſlands.

Theſe ſtorms are commonly preceded by a great ſea out of the north. From January till May the winds are at N. E. or N. N. E. fine freſh gales and fair weather. From May till October the winds are ſoutherly, in July, Auguſt and September there are great calms in the bay of Pate and at Melende, and a ſtrong current ſetting into the bay: therefore ſhips that have occaſion to paſs this way in thoſe three months, ought to keep at leaſt one hundred leagues from the coaſt to avoid being driven by the current into the bay; for theſe calms ſometimes laſt ſix weeks, yet off at ſea, at the diſtance of one

hundred

hundred leagues the winds are freſh at ſouth. At the entrance into the Red-ſea near the Cape Guardefuer there are commonly very hard gales and turbulent weather, even when the calms are ſo great in the bay of Melende, and not above ten or twelve leagues at ſea from the ſaid Cape, there is alſo very fair weather, and pretty freſh gales.

In the Red-ſea from May till October, the winds are ſtrong at ſouth weſt, and the current ſetting out ſtrong, ſo that there is no entering into that ſea in thoſe months, except you keep cloſe to the ſouth ſhore, there you have land winds, and an eddy current. In the months of September or October, the wind ſhuffles about to the north, and at laſt ſettles at north eaſt, then comes fair weather on this coaſt, and ſo continues till the monſoon ſhifts, which is in April or May; then it firſt takes one flurry at N. and from thence veers to the eaſt, and ſo about to the ſouth, and there it ſettles.

The account of this coaſt from the Cape of Good Hope hither, I had from captain Rogers.

And as this hithermoſt part of the Eaſt Indies, even from the Cape of Good Hope to the Red-ſea, which coaſt lies neareſt north eaſt and ſouth weſt, hath its ſhifting ſeaſons, ſo the other parts of India, from the Gulph of Perſia, to Cape Comorin, has its conſtant annual change, and from Comorin clear round the Bay of Bengal, the change is no leſs; and even from thence, through the ſtreights of Malacca, and eaſtwards as far as Japan, the ſhifting trade-winds alternately ſucceed each other as duly as the year comes about.

It cannot be ſuppoſed that the trade-wind in all theſe places, ſhould be exactly on one point of the compaſs: for I have already ſhewn, that theſe trade winds on any coaſt do commonly blow ſlanting on the ſhore about two or three points; therefore in

bays where the land lies on ſeveral rhumbs, the winds muſt alter accordingly. Though that rule does not hold altogether true in bays that are deep, but is chiefly meant for a pretty ſtreight coaſt, which lies near alike, allowing for points of land and ſmall coves, which make no alteration; but on the ſides and in the bottom of large bays, ſuch as the bay of Bengal, the bay of Siam, &c. the wind differs much on one ſide of the bay from what it does on the other; and both ſides differ from the conſtant trade on the open coaſt; yet all ſhirt in the ſhifting ſeaſons, which are April and September at one and the ſame time, to their oppoſite points: I mean on the open coaſt, for in ſome bays there is a little alteration from that general rule.

Theſe ſhifting winds in the Eaſt Indies, are called monſoons; one is called the eaſt monſoon, the other the weſt monſoon. The eaſt monſoon ſets in about September and blows till April; then ceaſes, and the weſt monſoon takes place and blows till September again.

And both the eaſt and weſt monſoons blow in their ſeaſons ſlanting on the coaſt, as is before deſcribed: the eaſt monſoon brings fair weather; the weſt brings tornadoes and rain. For, as I ſaid before in the firſt chap. of the general trade-wind at ſea) when the ſun comes to the north of the line then all places north of the equator, within the tropicks, are troubled with clouds and rain, but when the ſun is in ſouthern ſigns then the ſky is clear. And as moſt of the trading countries in the Eaſt Indies, eſpecially thoſe on the main continent, lie between the line and the tropick of Cancer: ſo theſe countries are all ſubject to the changes and ſeaſons already deſcribed. But the iſlands lying under the line, and to the ſouth between the line and the tropick

pick of Capricorn, have contrary ſeaſons to theſe. Yet do they change at the ſelf-ſame time.

The difference between the monſoons on the N. of the line, and the monſoons on the ſouth of the line is that in April, when the weſt monſoon ſets in to the north of the line, the ſouth ſouth weſt wind ſets in to the ſouth of the line, and is called the ſouth ſouth weſt monſoon. And in September when the eaſt monſoon ſets in to the north of the line, the N. N. E. wind blows in ſouth lat. and is called the N. N. E. monſoon. And whereas the weſt monſoon is accompanied with tornados and rain in north lat. the S.S.W. monſoon, which blows at the ſame time in ſouth lat. is accompanied with fair weather. And as the eaſt monſoon is attended with fair weather in north lat. the N. N. E. monſoon, which blows at the ſame time in ſouth lat. is attended with tornadoes and very bad weather. And tho' theſe winds do not ſhift exactly at one time in all years, yet September and April are always accounted the turning months, and do commonly participate of both ſorts of winds. For theſe monſoons as conſtantly ſhift by turns, as the year comes about. And by means of this change of wind, ſhips have the benefit to ſail from one part of India, with one wind, and return with the contrary: ſo that moſt of the navigation in India depends on the monſoons. And ſhips do conſtantly wait on theſe changes; and the merchants fit out to any place according as the ſeaſon of the year draws on: and whereſoever they go they certainly diſpatch their buſineſs ſo as to return back again with the next contrary monſoon; for here is no ſailing to and from any place, but with the monſoon; one carries them out, the other brings them back. Neither do I know how it were poſſible for merchants in theſe parts to trade by ſea from one country to another, were it not for theſe

ſhifting

ſhifting monſoons. For, as I have ſaid before, moſt of the trading kingdoms in India lie between the line, and the tropick of Cancer. And the land lies ſo to the north, that ſhips cannot go to the north of the tropick, and by that means get into a variable winds way, as they may and do in the W. Indies, when they are bound far to the eaſtward. Neither could it be any advantage to ſtand off to ſea, as they may in the South-ſea, for that would be of little moment, becauſe they would then come ſo near the line, that they would be always liable to tornadoes and calms: and ſhould they croſs the line and run to the ſouthward of it, thinking that way to gain their paſſage, it is likely they might ſucceed no better there; for that part of the ſea which lies to the ſouthward of the line, is open and free to the true trade, which ſeldom fails; but indeed that wind would carry them to the ſouthward quite beyond the trade into a variable winds way. But the ſea is not open there, for ſhips to paſs ſo far to the eaſtward as to gain their ports.

For our Eaſt India ſhips that are bound to Siam, Tonquin, China, &c. cannot get thither but in the ſeaſon of the weſt monſoon, though they go directly from England; and though, after they are paſt the Cape, they have the convenience to ſtretch to the eaſtward, as far as the land will permit, yet they cannot go ſo far as is convenient before they will be obliged to ſteer down within the courſe of the trade-winds, which would obſtruct their paſſage, if they were as conſtant here as in other places. And therefore if theſe anniverſary monſoons did not conſtantly ſucceed each other; ſhips could not paſs but one way; they might ſail to the weſtward, but there they muſt lie up or be three or four years in their return from a place which may be ſailed in 6 weeks, yet I ſay, that to places near each other ſhips may

and

and do very often ſail againſt the monſoon, and that with ſucceſs: for here are ſea and land breezes under the ſhore, and in many places good anchoring, by which means ſhips may ſtop when they find the current againſt them: but voyages of a great diſtance cannot be made only with land and ſea winds without ſome other helps.

In the Weſt Indies we have theſe helps of land-winds and ſea-breezes by which we ſail from one place to another, provided they are no great diſtance aſunder, and perform our voyages well enough; but when we are to ſail a great way to the eaſtward againſt the trade-wind, then we are forced, as is ſaid before, either to paſs through the Gulph of Florida, if we are far to leeward, or elſe to paſs between the iſlands, and ſo ſtretch away to the northward, till we are clear out of the trade, and ſo get our longitude that way. So in the South-ſeas alſo, and on the coaſts of Guiney, the coaſt of Brazil, and the coaſt of Africa, between the Cape of Good Hope and the Red-ſea, there are ſea and land-breezes, which may be made uſe of to ſail againſt the trade, if the voyages be ſhort: but when we are to ſail a great way againſt the trade-wind, we muſt not wholly depend on the ſea and land-breezes, for then we ſhould be a long time in accompliſhing ſuch voyages. In ſuch caſes we have recourſe to other helps, ſuch as providence has ſupplied theſe ſeas with, which ſeems to be wanting in the Eaſt Indies; as for example, in the South-ſeas and on the coaſt of Peru where the ſoutherly winds blow conſtantly all the year, there ſhips that are bound to the ſouthward ſtretch off to the weſtward till they are out of the coaſting trade-wind, and there meet with the true trade at E.S.E. with which they ſail as far as they pleaſe to the ſouthward, and then ſteer in for their port. So on the coaſt of Mexi-

co,

co, where the coaſting trade is weſterly, there they run off to ſea, till they meet the true E. N. E. trade; and then ſtretch away to the northward, as far as their port; and ſhips that come from the Philipines, bound for the coaſt of Mexico, ſtretch away to the north, as far as 40 degrees to get a wind to bring them on the coaſt.

Thus alſo all ſhips bound to the Eaſt Indies, after they are paſt the line in the Atlantic ocean, ſtretch away to the ſouthward beyond the trade, and then ſtand over to the eaſtward, towards the Cape; ſo in returning home, after they have croſſed the line to the northward, they ſteer away north, with the wind at E. N. E. till they are to the northward of the trade-wind, and then direct their courſe eaſterly. All Guiney ſhips and Weſt-India ſhips do the ſame in their returns: and this is the benefit of an open ſea. But to return.

The monſoons among the Eaſt-India iſlands that lie to the ſouthward of the line, as I ſaid before, are either at N.N.E. or S.S.W. Theſe alſo keep time, and ſhift as the monſoons do to the north of the line, in the months of April and September, but near the line, at a degree or two on each ſide, the winds are not ſo conſtant. Indeed there they are ſo very uncertain, that I cannot be particular ſo as to give any true account of them: only this I know, that calms are very frequent there, as alſo tornadoes and ſudden guſts; in which the winds fly in a moment quite round the compaſs.

CHAP.

CHAP. IV.

Of SEA *and* LAND-BREEZES.

How ſea breezes differ from common trade-winds. The time and manner of their riſe, and particularly at Jamaica. Of the land-breezes; the time and manner of their riſe, as on the iſthmus of Darien and at Jamaica. The places where theſe winds blow ſtrongeſt or ſlackeſt, as at the capes and head-lands, deep bays, lagunes and iſlands. Seal ſkin bladders uſed inſtead of bark logs.

SEA-breezes, generally ſpeaking, are no other than the common trade-wind of the coaſts on which they blow, with this difference, that whereas all trade-winds, whether they are thoſe that I call the general trade winds at ſea, or coaſting trade-winds, either conſtant or ſhifting, blow as well by night as by day, with an equal briſkneſs, except when tornadoes happen: ſo contrarily, ſea-winds are only in the day, and ceaſe in the night; and as all trade-winds blow conſtantly near to one point of the compaſs, both where the conſtant trade-winds are, or where they ſhift; on the contrary, theſe ſea-winds differ from them in this, that in the morning when they ſpring up, they blow commonly as the trade-winds on the coaſt do, at or near the ſame point of the compaſs; but about mid-day they fly off two, three or four points further from the land, and ſo blow almoſt right in on the coaſt, eſpecially in fair weather, for then the ſea-breezes are trueſt; as for inſtance, on the coaſt of Angola the land lies almoſt north and ſouth, there the trade-wind is from the S. S.W. to the S. W. the true ſea-breezes near the ſhore are at W. by S. or W. S. W. and ſo of any other coaſt.

Theſe

Theſe ſea-breezes commonly riſe in the morning about nine o'clock, ſometimes ſooner, ſometimes later; they firſt approach the ſhore as gently, as if they were afraid to come near it, and oft-times they make ſome faint breathings, and as if not willing to offend, they make a halt, and ſeem ready to retire. I have waited many a time both aſhore to receive the pleaſure, and at ſea to take the benefit of it.

It comes in a fine, ſmall, black curl upon the water, when all the ſea between it, and the ſhore not yet reach'd by it, is as ſmooth and even as glaſs in compariſon: in half an hour's time after it has reached the ſhore it fans pretty briſkly, and ſo increaſes gradually till twelve o'clock, then it is commonly ſtrongeſt, and continues ſo till two or three, a very briſk gale: about twelve at noon it alſo veres off to ſea two or three points, or more in very fair weather. After three o'clock it begins to die away again, and gradually withdraws its force till all is ſpent, and about five o'clock, ſooner or later, according as the weather is, it is lull'd aſleep, and comes no more till the next morning.

Theſe winds are as conſtantly expected as the day in their proper latitudes, and ſeldom fail but in the wet ſeaſon. On all coaſts of the main, whether in the Eaſt or Weſt Indies, or Guiney, they riſe in the morning, and withdraw towards the evening, yet capes and head lands have the greateſt benefit of them, where they are higheſt, riſe earlier, and blow later.

Bays contrarily have the diſadvantage, for there they blow but faintly at beſt, and their continuance is but ſhort. Iſlands that lie neareſt eaſt and weſt, have the benefit of theſe winds on both ſides equally; for if the wind is at S. W. or S. W. and by S. on the ſouth ſide of the iſland, then on the north

ſide

ſide it would be at N. W. or N. W. by N. *i. e.* in fair weather; but if turbulent weather it would be E. S. E. on the ſouth ſide, and E. N. E. on the other: but this true ſea-breeze does not veer ſo far out except only near the ſhore, at about three or four leagues diſtant; for farther than that, you will find only the right coaſting trade-wind. This I have experienced in ſeveral parts of the world, particularly at Jamaica, about which I have made many voyages, both on the north and ſouth ſide, where I have found the ſea breezes differ very much; for on the ſouth ſide I have found the true ſea-wind after twelve o'clock, and in very fair weather at S. or S. S. E. though it ſprung up in the morning at E. S. E. or S. E. and on the north ſide I have found the ſea-breeze at N. or N. N. E. though it roſe in the morning at E. N. E. but whether there may be the like difference about ſmaller iſlands, as at Barbadoes, &c. I cannot determine, though I am apt to believe there is not. So much for the ſea-winds: next of the land-breezes.

Land-breeze are as remarkable as any winds that I have yet treated of; they are quite contrary to the ſea-breezes, for thoſe blow right from the ſhore, but the ſea-breeze right in upon the ſhore; and as the ſea-breezes blow in the day and reſt in the night; ſo on the contrary, theſe blow in the night and reſt in the day, and ſo they do alternately ſucceed each other. For when the ſea-breezes have performed their offices of the day, by breathing on their reſpective coaſts, they in the evening either withdraw from the coaſt or lie down to reſt; then the land-winds, whoſe office it is to breath in the night, moved by the ſame order of divine impulſe, rouze out of their private receſſes and gently fan the air till the next morning; and then their taſk ends and they leave the ſtage.

There

There can be no proper time ſet when they begin in the evening or when they retire in the morning, for they do not keep to an hour; but they commonly ſpring up between ſix and twelve in the evening, and laſt till ſix, eight, or ten in the morning. They both come and go away again earlier or later, according to the weather, the ſeaſon of the year, or ſome accidental cauſe from the land: for on ſome coaſts they riſe earlier, blow freſher, and remain later than on other coaſts, as I ſhall ſhew hereafter.

They are called land-winds, becauſe they blow off ſhore contrary to the ſea-breeze, which way ſoever the coaſt lies: yet I would not ſo be underſtood, as if theſe winds are only found to breathe near the ſhore of any land, and not in the inland parts of ſuch countries remote from the ſea; for in my travels I have found them in the very heart of the countries that I have paſſed through, as particularly on the iſthmus of Darien, and the iſland of Jamaica: both which places I have travelled over from ſea to ſea; yet becauſe theſe are but ſmall tracts of land in compariſon with the two main bodies of land of Mexico and Peru, and thoſe vaſt regions in Aſia and Africa, lying within the tropicks, I cannot determine whether the land-winds are there, as I have found them in my ſmall travels; therefore I ſhall only confine this particular diſcourſe to theſe and other places within my own obſervations. I ſhall begin firſt with the iſthmus of Darien; there I have found the land-winds in the middle of the country blowing all night, and till ten or eleven o'clock in the morning, before I could perceive the ſea-breeze to ariſe, and that not diſcernable many times, but by the flying of the clouds, eſpecially if I was in a valley; and it was in vallies that I chiefly perceived the land-winds, which blew

in

in ſome places one way, in others contrary, or ſide ways to that, according as the vallies lay penn'd up between the mountains; and that without any reſpect to either the north or the ſouth ſeas, but indeed near either ſide of the land, they always bent their courſe towards the neareſt ſea, unleſs there was any hill between them and the ſea, and then they took their courſe along in the vallies; but from both ſhores, as well from the north as the ſouth, they blow right forth into the ſea.

In the iſland of Jamaica theſe land-winds are in the middle of the country, alſo I have found them ſo, as I travelled from one ſide of the iſland to the other, having lain two nights by the way, as I had before obſerved them, when I liv'd at Sixteen miles walk, where I continued about ſix months; but there and in other iſlands the land winds blow towards the neareſt ſhore, and ſo from thence off to ſea, whether the ſhores lie eaſt, weſt, north or ſouth.

Theſe winds blow off to ſea, a greater or leſs diſtance according as the coaſt lies more or leſs expoſed to the ſea-winds: for in ſome places we find them briſk three or four leagues off ſhore, in other places not ſo many miles, and in ſome places they ſcarce peep without the rocks, or if they do ſometimes in very fair weather make a ſally out a mile or two, they are not laſting, but ſuddenly vaniſh away, though yet there are every night as freſh land-winds aſhore at thoſe places as in any other part of the world.

Places moſt remarkable for the feweſt or fainteſt land-winds, are thoſe that lie moſt open to the common trade-winds, as the eaſt ends of any iſland where the trade-winds blow in upon the ſhore, or the head-lands on iſlands or continents that are open to the ſea-breeze, eſpecially where the trade-

wind blows down ſideways, by the coaſt; for there ſuch head-lands as ſtretch fartheſt out to ſea are moſt expoſed to winds from the ſea, and have the leſs benefit of the land-breezes.

I ſhall give a few inſtances of either. And firſt of all begin with the N. E. and S. E. points of the iſland of Jamaica: theſe points are at the eaſt end of the iſland, one is at the very extream of the north ſide towards the eaſt, the other on the ſouth extream towards the ſame point; at theſe two places we ſeldom light of a land-wind, nor very often at the end of the iſland between them, except near the ſhore. For that reaſon the ſloopmen of Jamaica that trade round the iſland are commonly put to their trumps, when they come there in their voyages; for if they meet no land-wind they are obliged to beat about, turning to windward againſt the ſea-breeze in the day time; they then curſe theſe points of land, and are fooliſhly apt to believe that ſome dæmon haunts them.

And if they are two or three days in beating about (as ſometimes they are) when they return to Port Royal, they will talk as much of their fatigues, as if they had been beating a month to double the Cape of Good Hope, though indeed the men are briſk enough, and manage their ſloops very well; which alſo are generally very good boats to ſail on a wind. I think they are the beſt ſmall trading-boats in the king's dominions.

Point Pedro on the ſouth ſide of the iſland, is another very bad point to double, if a ſhip come from the weſt-end of the iſland: this point runs out far into the ſea, and is not only deſtitute of the common land-winds, but if there is any current ſetting to leeward, here the ſloopmen meet it. Therefore they are many times longer beating about it, than about the two former points of the

ſouth

ſouth eaſt and north eaſt, and not without beſtowing ſome curſes upon it. Nay, ſome captains of privateers, when they have been beating about it, have ſtood cloſe in to the point, and fired their guns to kill the old dæmon that they ſay inhabits there to diſturb poor ſeamen. I have related theſe odd paſſages to ſhew how ignorant men are that cannot ſee the reaſon of it. And becauſe I am not willing to leave my reader in the dark, I ſhall give a few inſtances more on this ſubject. The north ſide of Jucatan, at the entrance into the Bay of Campeachy, gives us another inſtance of bad land winds; and commonly where the land-winds are ſcanty, the ſea-breezes are but indifferent neither. This will partly appear by what I have obſerved of them on this coaſt between Cape Catoach, and Cape Conduſedo at the entrance of the Bay of Campeachy, which two places are about eighty leagues diſtant; for there the land tends eaſt and weſt. It is a ſtreight coaſt and lies all of it equally expoſed to the trade-wind, which is commonly there at E.N.E To the weſt of theſe places the ſea and land-winds as duly ſucceed each other, as on any other coaſt, but here they are each of them of a baſtard kind; for the ſea-breezes are at N. E. by E. which is no better than a coaſt trade-wind, and the land-wind is at E.S.E. or S. E. by E. whereas, if the winds were as true there as on other coaſts, the ſea-breeze would be at N. N. E. ſometimes at N. and the land-winds would be at S. S. E. and S. as they are indeed cloſe under the ſhore; which if they do at any time come off from, they are very faint. The land on this coaſt is low and even, and the land-winds aſhore are pretty briſk.

The capes on the Peruvian coaſt in the South-ſeas, will more fully make it appear, that head-lands ſeldom afford any land-winds, I ſhall only

inſtance in Cape Paſſao, in lat. 8 min. ſouth, Cape St. Laurence, in lat. 1 d. — ſouth, and C. Blanco, in 3 d. --- ſouth. I have paſſed by them all ſeveral times and at different ſeaſons, yet did never find any land-winds there, though between theſe places there are very good land-winds. Therefore ſhips that ſail to the ſouthward againſt the breeze, muſt beat it about by hard labour, eſpecially about Cape Blanco, for that lies more expoſed than the other two: and if there is any current, as commonly, the Spaniards are a long time getting about, ſometimes a fortnight or three weeks; and when they have ſplit their ſails, which are ſeldom very good, they run back to Guaiquill to mend them again. We found it hard getting about, tho' our ſails were good; and I think we could work our ſhips better than the Spaniards are ever able to do in thoſe ſeas.

I have already given ſeveral inſtances of ſuch places, as have no land-winds, or at leaſt but very ordinary ones: I ſhall next proceed in order to ſhew where the ſtrongeſt or beſt land-winds are met with; and then I ſhall ſpeak of thoſe places where there blows a moderate and indifferent gale between both extreams: that ſo any one may judge by the lying of the land, whether it may afford a good land-wind or no.

The briſkeſt land-winds are commonly in deep bays, in great lakes within land, and among great ranges of iſlands or ſmall keys that lie near the ſhore: I ſhall give inſtance of all theſe. And as for bays, I ſhall firſt pitch on the Bay of Campeachy, which lies between Cape Conducedo and the high-land of St. Martin; between both theſe places the land-winds are as briſk two or three leagues off at ſea, as in any place that I know. In the cod or middle of the bay, the land tends from eaſt to weſt; there the ſea-breezes are at north, and

the

the land-winds at ſouth; they commonly begin to blow at ſeven or eight o'clock in the evening, and continue till eight or nine the next morning, in the dry ſeaſon eſpecially. In that bay there is an iſland, called by the Engliſh Beef-iſland, from the multitude of bulls and cows that inhabit it. The ſmell of theſe wild cattle is driven off to ſea, by the land winds ſo freſh, that by it maſters of ſhips ſailing in the night on this coaſt have known where they were, and have preſently anchored that night, and come into the iſland of Trieſt the next day; whereas they would otherwiſe have paſt farther to the weſtward quite out of their way, if they had not ſmelled the ſtrong ſcent of the cattle.

So all the bottom of the bay of Mexico, even from the high-land of St. Martin down to La Vera Cruz, and from thence northerly towards the river Miſſaſſippi affords good land-winds and ſea-breezes. The bay of Honduras alſo, and almoſt all the coaſt between it and Cape la Vela, affords the like, allowing for the capes and points of land which lie between; where it fails more or leſs, as the points lie more or leſs expoſed to the ſea-breezes.

So in the South-ſeas, the bays of Panama, Guiaquil, Payta, &c. have their freſh land-winds and ſea-breezes. But in ſome places, as particularly at Payta, the land winds do not ſpring up till twelve o'clock in the night, but they are always very freſh, and laſt till ſeven or eight the next morning; and they are conſtant all the year long: whereas in the Bay of Panama, and alſo in all the bays and coaſts of the other, or north ſide of America, already deſcribed, they are not ſo conſtant in the wet ſeaſon as they are in the dry.

The Bay of Campeachy will alſo afford us inſtances of the land winds that blow in lagunes; as for inſtance, the lagune of Trieſt, which is about

nine or ten leagues long, and three broad, is barricadoed from the ſea by the iſland Trieſt. There the land-winds blow in the dry ſeaſon, from five or ſix o'clock in the evening till nine or ten in the morning. There are two other lagunes lying within that, and parted from it by low mangrove-land: there the land-winds are freſher and the ſea breeze duller, and of a leſs continuance, than in the lagune of Trieſt. Nay, ſometimes the land-wind blows all day; ſo in the lagune of Maracaybo to windward of Cape Alta Vela, the land-winds are very freſh and laſting. The like may be ſaid of the lagune of Venizuella or Comana.

Sometimes in the fore-mentioned lagunes, the land-winds blow for three or four days and nights together, ſcarce ſuffering the ſea-breeze to breathe there, though at the ſame time the ſea-breeze may blow freſh out at ſea; and if the ſea-breeze at ſuch times ſhould make a bold ſally into theſe lagunes, it would be but of ſhort continuance. On the other hand, at capes and head-lands more expoſed to ſea-breezes, the land-winds are ſhyer of coming there, than the ſea-winds are into lagunes. Neither may we forget the harbour of Jamaica, for there are very good land-winds. It is compaſſed in on one ſide with a long neck of ſand, and many ſmall iſlands at the mouth of it, and within there is a pretty deep lake, in which are conſtant ſea and land-winds, by which the wherry-men run with full ſail, both to Legamy or Paſſage-Fort, from the town and back again. They go away with the ſea-breeze, and return with the land-wind. Therefore paſſengers that have occaſion to go either way, wait for the coming of theſe winds, except their buſineſs requires haſte; for then they are rowed againſt the breeze: and though the land-winds do ſometimes fail, or come very late, yet the wherries ſeldom

dom ſtay beyond their conſtant hours of ſeven or eight o'clock, and ſometimes the land-winds come by three or four, but when they come ſo early it is commonly after a tornado from the land. This may ſuffice as to the land-winds in lakes or bays.

As to what may be ſpoken concerning the land-winds among iſlands, I ſhall only mention two places, both of them in the Weſt Indies; the firſt are the Keys of Cuba, which are a number of ſmall iſland bordering on the ſouth ſide of Cuba, reaching in length from eaſt to weſt, or near thoſe points, as the iſland lies, about ſeventy leagues; and in ſome places reaching near twenty leagues from the ſaid iſland. Among theſe iſlands, even from the outermoſt of them, quite home to Cuba, there are very briſk land-winds. They ſpring up early in the evening, and blow late in the morning. The Jamaica turtlers viſit theſe Keys with good ſucceſs for turtle all the year long, and from thence bring moſt of the turtle wherewith the market of Port-Royal is ſerved. The other iſlands I ſhall mention are the Sambaloe iſlands betwixt Cape Samblaſs and Golden Iſland, though they are not ſo large a range as the Keys of Cuba, yet do they afford very good land-winds; near as good as the Keys of Cuba do. And thus much for the places where the beſt as well as where the ſcantieſt or fainteſt land-winds are found. I ſhall next give ſome inſtances of the medium between both extreams.

I have already ſhewn that capes and ſuch headlands as lie out fartheſt from the reſt of the ſhore, are thereby moſt expoſed to the ſea-winds, and conſequently the land-winds are there much fainter than in other places, eſpecially in deep bays or lagunes within land; all which is no more than my own experience has taught me. I ſhall now ſhew how the land-winds blow on coaſts that lie more

level. As all coaſts have their points and bendings, ſo accordingly the land-winds are freſher or fainter, as you come either towards theſe bendings or towards intermitting points or head-lands.

I ſhall give an inſtance of this by ſhewing how the winds are on the coaſt of Caraccas. It is as ſtreight a ſhore as I can pitch on, yet full of ſmall bays, divided from each other by a like number of ridges of high-land, that ſhoot forth their heads a little way without the bays on each ſide. There in the night or morning, while the land-wind blows, we find freſh gales out of the bays; but when we come abreaſt of the head-lands, we find it calm, yet ſee the breeze curling on the water on both ſides of us, and ſometimes get a ſpurt of it to help us forward: and having recovered the wind out of the next bay, we paſs by the mouth of it preſently, till we come to the next head, and there we lie becalmed as before.

Theſe bays are not above half a mile or a mile wide; neither are the heads much wider; but theſe heads of the ridges lying in between the bays have ſteep cliffs againſt the ſea; and where ever I have met the like ſteep cliffs againſt the ſea, I have ſeldom found any land-winds. But in all other places where the bays ſtrike deeper into the land, there we find the land-wnds more laſting and ſtrong; and where the points are further out, there are ſtill the leſs land-winds, and the briſker ſea-breezes. For, the capes and ſmaller points on all ſhores ſeem to be ſo many barricadoes to break off the violence of the ſea-breezes; for this we always find when we are turning to windward being to leeward of a cape, that the breeze is moderate, eſpecially if we keep very near the ſhore; but when once we come within a mile, more or leſs, of the cape and ſtand off to ſea, as ſoon as we get without it, we find ſuch a huffing

huſſing breeze, that ſometimes we are not able to ply againſt it, but in the night we find a freſh land-wind to leeward, tho' when we come to the cape we find it calm, or perhaps ſometimes meet with a ſea-wind. The land-breezes on the coaſt of Guiney between Cape St. Ann's and Cape Palmas (mentioned in the ſecond chaper of this diſcourſe) are at E. blowing briſk four leagues off ſhore: the ſea-winds there are at ſouth weſt. The land-winds on the coaſt of Angola are at eaſt north eaſt, the ſea-winds at weſt ſouth weſt: theſe are very true winds of both kinds.

The land-winds on the coaſt of Peru and Mexico in the South-ſeas, are in moſt places right off from the ſhore, elſe the fiſhermen could never go out to ſea, as they do, on bark-logs. And as the land-winds are true there, ſo are the ſea-breezes alſo; for with the land-wind they go out to fiſh, and return in again with the ſea-winds. In ſome places they uſe ſeal ſkins inſtead of bark-logs; they are made ſo tight that no bladder is tighter. To theſe they have long necks, like the neck of a bladder, into which they put a pipe and blow them up, as we do bladders; two of theſe being faſtened together, a man ſits a-ſtride them, having one before and the othar behind him; and ſo ſits firmer than in a trooper's ſaddle. His paddle is like a quarter-ſtaff, with a broad blade at each end; with this he ſtrikes the ſea back, firſt on one ſide, and then on the other, with each end of his paddle, and ſo gives himſelf freſh way through the water.

In the Eaſt Indies alſo there are true ſea-breezes, as well on the iſlands as on the main. On iſlands, as at Bantam in the iſland Java, and at Achin in the iſland Sumatra, and in many places on the iſland Mindanao: and on the main alſo, as particularly at Fort St. George on the Coromandel coaſt.

There

There the land-winds blow right off from the ſhore, and the ſea-winds right in; but ſometimes they come ſlanting in; and about Chriſtmas they blow from the N. E. or N. N. E. I found them ſo when I came on the coaſt, and being adviſed of it by Mr. Coventry in whoſe ſloop I then was, I fell in with the land ten or twelve leagues to the northward of the fort, and had a briſk northerly ſea-wind to bring me into the road.

I think theſe inſtances are enough to ſhew how theſe land-winds uſually blow in moſt parts of the world; ſhould I be very particular, 'tis not a larger treatiſe than I intend this to be, would hold a quarter part of it. But I have been more particular in the Weſt Indies and South-ſeas, becauſe theſe land-winds are of more uſe there than in the Eaſt Indies: for though ſometimes men in the Eaſt Indies turn againſt the monſoons, yet they gennerally tarry for them before they budge.

Indeed theſe winds are an extraordinary bleſſing to thoſe that uſe the ſea in any part of the world, within the tropicks; for as the conſtant trade-winds blow, there could be no ſailing in theſe ſeas; but by the help of the ſea and land-breezes, ſhips will ſail two or three hundred leagues, as particularly from Jamaica, to the lagune of Trieſt, in the Bay of Campeachy, and then back again, all againſt the trade-wind: and I think this is one of the longeſt voyages that is uſed of this kind. If any of our Jamaica ſloops do go to Trieſt, and deſign to carry their wood to Curaſao, then they put thro' the Gulph of Florida.

The Spaniards alſo that come from any part of the bay of Mexico, and are bound to any place to windward of the iſland Cuba, are wont to paſs thro' the gulph, and ſo ſtretch away to the northward, till they come clear of the trade, and then ſtand

away

away as far as they pleaſe to the eaſtward; this is alſo the uſual way from Jamaica to Barbadoes, tho' ſometimes they run up by the Carribee iſlands only taking the benefit of theſe ſea and land-winds. So alſo ſhips may and do paſs from Porto Bello to Carthagena, or to St. Martha, or to any other place, by the help of theſe breezes, if the diſtance is not too far. So by taking the advantage of theſe winds ſloops in the Weſt Indies ſail clear round the iſlands, or to any part of them, in a ſhort time.

In the South-ſeas alſo, the Spaniards in their voyages from Panama to Lima, by taking the advantage of theſe winds, ſail as high as Cape Blanco; but in all their voyages to the ſouthward of that cape, they ſtand quite off to the ſea into the trade. Thus you ſee the uſe and advantage of them.

The ſeamen that ſail in ſloops or other ſmall veſſels in the Weſt Indies, know very well when they ſhall meet a briſk land-wind, by the fogs that hang over the land before night; for it is a certain ſign of a good land-wind, to ſee a thick fog lie ſtill and quiet like ſmoke over the land, not ſtirring any way; and we look out for ſuch ſigns when we are plying to windward. For if we ſee no fog over the land, the land-wind will be but faint and ſhort that night. Theſe ſigns are to be obſerved chiefly in fair weather; for in the wet ſeaſon, fogs hang over the land all the day, and it may be neither land-wind nor ſea-breeze ſtirring. If in the afternoon alſo in fair weather, we ſee a tornado over the land, it commonly ſends us forth a freſh land-wind.

Theſe land-winds are very cold, and though the ſea breezes are always much ſtronger, yet theſe are colder by far. The ſea-breezes indeed are very comfortable and refreſhing; for the hotteſt time in all

all the day is about nine, ten or eleven o'clock in the morning, in the interval between both breezes: for then it is commonly calm, and then people pant for breath, eſpecially if it is late before the ſea-breeze comes, but afterwards the breeze allays the heat. However, in the evening again after the ſea-breeze is ſpent, it is very hot till the land-wind ſprings up, which is ſometimes not till twelve o'clock or after.

For this reaſon men when they go to bed uncloath themſelves and lie without any thing over them; nay, the ordinary ſort of people ſpread mats at their doors, or elſe in their yards, in Jamaica, and lie down to ſleep in the open air.

In the Eaſt Indies at Fort St. George alſo, men take their cotts or little field-beds, and put them in the yards, and go to ſleep in the air: and ſeamen aboard ſhips in theſe hot countries lie on the decks, till the land-wind comes.

The inhabitants of Jamaica or Fort St. George, have ſomewhat to cover themſelves when the land-wind comes, beſides a pillow on their breaſt, or between their arms. But ſeamen who have wrought hard all day, lie naked and expoſed to the air, it may be all night long, before they awake, without any covering, eſpecially if they have had their doſe of punch. But the next morning they are ſcarce able to budge, being ſtiff with cold, which brings them to fluxes, and that to their graves; and this is the fate of many ſtout and brave ſeamen: and it is a great pity that maſters of ſhips have ſo little regard for their men, as not by ſome good orders, to prohibit this dangerous cuſtom of lying abroad and naked in the nights.

CHAP.

CHAP V.

Of LAND-WINDS *and* SEA-BREEZES *peculiar to ſome coaſts at ſome particular ſeaſons of the year; as alſo of ſome winds that produce ſtrange effects.*

Of the Summaſenta winds in the Bay of Campeachy. Of the winds peculiar to the coaſts of Carthagena. Winds on the Mexican coaſts, called Popogaios. Others on the coaſt of Coromandel, called Terrenos: the ſame about Malabar, but at a different ſeaſon: as alſo in the Perſian Gulph. And of the Hermatans on the coaſt of Guiney.

I Shall begin with the Summaſenta winds, as they are called, which blow in the Bay of Campeachy. Theſe are winds that come in the months of Feb. March and April, and blow only in that bay between the high-land of St. Martin and Cape Conducedo, which places are about one hundred and twenty leagues aſunder. They are, properly ſpeaking, neither ſea-breezes nor true land-winds, yet in reſpect of their blowing in ſome meaſure from the ſhore, they are in that ſomewhat of kin to the land-winds. Theſe winds are commonly at E. S. E. in the coc or middle of the bay where the land lies E. and W. and the true land-winds there are at S. S. E. but from thence toward Cape Conducedo, the land tends away N. E. N. N. E. and N. So that they become land-winds there reſpecting the land from whence they blow; but then they differ both from ſea and land-breezes in reſpect to their duration: for theſe Summaſenta winds blow three or four days, ſometimes a week, both night and day before they ceaſe. They are commonly dry winds and blow very freſh, and ſhips that go from Trieſt with logwood at the time when theſe wind

winds blow, will be at Cape Conducedo in three or four days; whereas if they go at any other time, it will take up eight or ten days, tho' ſeldom more than that; for here are good land-winds and ſea-breezes at other times.

Theſe winds are commonly colder than the ſea-winds, though not ſo cold as the land-winds, yet ſtronger than either. I never could perceive that theſe winds made any alteration on our bodies different from other winds. But the tides when theſe winds blow on the coaſt, are very ſmall, eſpecially in the lagunes of Trieſt; ſo that the logwood barks that bring the wood on board of the ſhips, are then forced to lie ſtill for want of water to float them over ſome flats in the lagunes.

On the coaſt of Carthagena there are a peculiar ſort of winds that blow in the months of April, May and June, ſo very fierce that ſhips are not able to ply to windward on that coaſt while theſe winds laſt. Theſe winds blow about forty or fifty leagues to windward of Carthagena town, and about ten to leeward of it. They are very fierce from the middle of the channel between it and Hiſpaniola, and ſo continue almoſt to the coaſt of Carthagena. Tho' they are ſometimes a little fainter within two or three leagues of the ſhore, eſpecially mornings and evenings. They commonly riſe in the morning before day, ſometimes at three or four o'clock, and ſo continue till nine, ten or eleven at night, and thus they will blow ten or eleven days together very fiercely. At this time the land-winds beſides their ſhort continuance are very faint and blow but a little way off ſhore: So that from ten or eleven at night till three in the morning 'tis quite calm and not one breath of wind from a league diſtant off the ſhore; tho' three or four farther off you'll find the breeze, and nearer a ſmall land-wind. Theſe

winds

winds are at E. N. E. as the common trade is; whereas the ſea-breezes are at N.E. by N. or north north eaſt.

While theſe fierce winds ſtay, the ſky is commonly clear without any cloud to be ſeen; though doubleſs 'tis imperceptably hazy, for then the ſun does not give a true black ſhade on the ground, but very faint and duſky. The horizon too looks very duſky, thick and hazy, and while the ſun is near the horizon, either in the morning or evening, it looks very red. Sometimes, though but ſeldom, when theſe winds blow the ſky is overcaſt with ſmall clouds, which afford ſome drizling ſmall rain. But though theſe winds are ſo fierce on the coaſt of Carthagena, yet both to windward and to leeward at the diſtances before-mentioned, the breezes blow moderate as at other times. For the ſea and land-winds do there keep their conſtant and regular courſes. Neither are the coaſts of Hiſpaniola or Jamaica troubled with theſe fierce winds, any nearer than half channel over, as was ſaid before.

It has not been my fortune to have been on this coaſt when theſe winds have blown, yet I have had the relation of it ſo often, and from ſo many perſons that I am very well ſatisfied of the truth of it: nay, it is ſo generally known among Jamaica ſeamen and privateers, that they call a talkative perſon, in deriſion, a Carthagea-breeze. I remember two or three men that went by that name, and I knew them by no other, tho' I was in the ſame ſhip with them ſeveral months.

Some of our Engliſh frigates that have been ſent to Jamaica have experienced theſe breezes, when the governor has ſent them upon buſineſs to that coaſt: for plying between Porto Bello and Carthagena, when they have been within ten leagues of Carthagena, they have met with the ſea breeze ſo ſtrong

ſtrong that they have been forced to riff their top-ſail, which even then they could not maintain, but have been obliged to furl it quite up; and ſo with only their lower ſails, which ſometimes they have been forced to riff too, have been beating eight or ten days, to get only ſo many leagues; which tho' at laſt they have done, yet has it been with much trouble, and not without damage to their ſails and rigging. Neither can I forget a ſquadron of French frigates, commanded by the count d'Eſtrees, that came to Jamaica, and demanded leave of the governor to wood and water there; which, becauſe it ſeemed ſtrange that they ſhould want in coming only from Petit Guavas; it was demanded of them why they came from thence ſo ill provided; They ſaid they went from Petit Guavas over to the coaſt of Carthagena, with a deſign to have plied to windward under that ſhore, but met the breezes ſo hard on the coaſt, that they were not able to hold up their ſides againſt it, and for that reaſon ſtood back again towards Petit Guavas; but not being able to fetch it, therefore they came to wood and water at Jamaica, deſigning to go from thence through the gulph: and tho' the pilots of Jamaica all concluded that the breeze-time was paſt by more than a month, yet the governor gave them leave to wood and water at Blewfield's Bay, and ſent one Mr. Stone to be their pilot thither. This was in 1679, and in one of our ſummer months, but I cannot tell which, tho' I was there.

In the South-ſeas on the Mexican Coaſt, between Cape Blanco in the lat. of 9d. 56m. north, and Realeja, in lat. 11 north, which two places are about 80 leagues diſtant, there are winds which blow only in the months of May, June, and July, call'd by the Spaniards Popogaios. They blow night and day without intermiſſion, ſometimes three or four

days

days or a week together. They are very briſk winds, but not violent: I have been in one of them when we went from Caldera Bay, bound to Realeja mentioned in my voyage round the world Vol. I. page 252, which blew at north.

In the Eaſt Indies on the coaſt of Coromandel, there are winds called by the Portugueſe Terrenos, becauſe they blow from the land. Theſe are not thoſe land-winds that I have already treated of; for theſe blow only in June, July and Auguſt, and are in ſeveral reſpects quite contrary to them. For whereas the true land-winds blow only in the night, including evenings and mornings; on the contrary, theſe blow three or four days without intermiſſion, nay, ſometimes a week or ten days together: and as the true nocturnal land-winds are very cold, on the contrary theſe are the hotteſt of all winds I ever heard of: they come with hot blooms, ſuch as I have mentioned in my voyage round the world, Vol. II. chap 35 p. 372. Theſe winds are at weſt, and they blow only in the months of June, July and Auguſt, which is the weſt monſoon ſeaſon, tho' the proper monſoon then on this coaſt is S.W. When theſe hot winds come the better ſort of people at Fort St. George keep cloſe: they alſo ſhut up their windows and doors to keep them out; and I have heard gentlemen that lived there ſay, that when they have been thus ſhut up within doors, they have been ſenſible when the wind ſhifted by the change they have felt in their bodies. And notwithſtanding that theſe winds are ſo hot, yet the inhabitants don't ſweat while they laſt, for their ſkins are hard and rough, as if they had been parched by the fire, eſpecially their faces and hands, yet does it not make them ſick. The ſands which are raiſed by theſe winds are a great annoyance to thoſe whoſe buſineſs lies abroad, and who cannot keep

their houſes. For many times they wheel about and raiſe the ſands ſo thick, that it flies like ſmoke in people's eyes; and the ſhips alſo that lie in the road at that time have their decks covered with this ſand.

On the coaſt of Malabar they have of theſe ſorts of winds alſo, but not at the ſame time of the year. For as theſe on the coaſt of Coromandel blow in the months of June, July and Auguſt, when the weſt monſoon reigns; on the contrary on the Malabar coaſt, they blow in the months of December, January and February, when the eaſt or north eaſt monſoons blow: for then the eaſterly wind, which is the true monſoon comes over from the land of this coaſt; this being the weſt ſide, as the coaſt of Coromandel is the eaſt ſide of this long Eaſt Indian promontory.

The Perſian gulph is as remarkable for theſe hot winds as either of the former; they come there in the months of June, July and Auguſt in the weſt monſoon time; and the heat there by all accounts does by far exceed that on the other coaſts.

The European merchants that are employed in the ports within the Perſian dominions, leave that coaſt, habitations and buſineſs there, during theſe hot months, and ſpend their time at Iſpahan till the air is more agreeable to their bodies; but their ſervants muſt endure it. And if any ſhips are there, then the ſeamen alſo muſt do as well as they can. Its reported the commanders keep bathing-troughs full of water to lie and wallow in, and hide their bodies from the noiſom hot blooms. I was never in any of theſe hot winds, for I went from Fort St. George before they came on the coaſt.

On the coaſt of Guiney there are a particular ſort of land-winds, which are very remarkable; not for their heat, as thoſe laſt mentioned, but for their exceeding

ceeding cold and ſearching nature. They are called Harmatans. I have had an account of them from ſeveral who have traded to Guiney; but more eſpecially from a very ſenſible and experienced gentleman, Mr. Greenhill, commiſſioner of his Majeſty's navy at Portſmouth; who upon my requeſt, was pleaſed to ſend me the following account: which the reader cannot have better than in his own words. Where, together with the Harmatans, he gives an account alſo of all the winds on that coaſt.

Mr. GREENHILL's LETTER.

SIR,

I Have been very ill ſince my return home with the gout; ſo that I have not been capable of anſwering your expectation: but being a little better recovered, I ſhall make as good a return to your enquiry of the Harmatans on the coaſt of Guiney, as my circumſtances will permit. The uſual time of their blowing is between the latter part of December, and the beginning of February; before and beyond which ſeaſons, they never exceed. They are of ſo very cold, ſharp, and piercing a nature, that the ſeams of the floors of our chambers and the ſides and decks of our ſhips (as far as they are above Water) will open ſo wide, as that with facility you may put a caulking-iron a conſiderable way into them; in which condition they continue ſo long as the Harmatan blows, (which is ſometimes two or three, and very rarely five days, which is the very utmoſt I ever obſerved or heard of) and when they are gone, they cloſe again and are as tight, as if it never had been. The natives themſelves and all perſons who inhabit

thoſe parts (during that ſhort ſeaſon) to prevent their pernicious effects, are obliged to confine themſelves within doors; where they endeavour their own ſecurity, by rendring their habitations as cloſe and impenetrable as poſſible: neither will they once ſtir abroad, unleſs induced thereto by a more than ordinary occaſion. It is as deſtructive to the cattle alſo; whoſe ſafe-guard conſiſts in their proprietor's care, who againſt this ſeaſon ought to provide ſome ſuch like place for them: otherwiſe they muſt expect but a pitiful account when the ſeaſon is over; for it moſt certainly deſtroys them, and that in a very ſhort time.

This I accidentally experimented by expoſing a couple of goats to the aſperity thereof; which in four hours ſpace or thereabouts, were deprived of life. Nay, we ourſelves (unleſs aſſiſted by the like conveniecy, and the benefit of ſome ſweet oils to correct the air (cannot fetch our breath ſo freely as at other times; but are almoſt ſuffocated with too frequent and acid reſpirations. They generally blow between the E. and E. N. E. to the northward of which they never exceed, being the moſt ſettled and ſteady (but freſh) gale, I ever obſerv'd; coming without thunder, lighting, or rain; but cloſe gloomy weather; the ſun not ſhining all the time: and when they expire, the trade-wind (which conſtantly blows on that coaſt at W. S. W. and S. W.) returns with the accuſtomary ſeaſonableneſs of weather.

The coaſt of Africa from Cape Palmas to Cape Formoſa, lies E. and E. by N. and near thoſe points the land breezes blow on that coaſt, which commonly begin about ſeven in the evening, and continue all night, till near that time the next morning: during which interval, we are troubled with ſtinking fogs and miſts off ſhore, which by return

of

of the ſea-breezes upon the oppoſite points are all driven away; and we have the benefit of them, in a curious freſh gale, till about five in the afternoon.

And here let me note it for a general obſervation, that in theſe and all other places within the tropics (as far as ever I took notice) the wind is drawn by the land. For if an iſland or head-land, were inclining to a circular form, the ſea and land-breezes fall in diametrically oppoſite to that part where you are. So that if you are on the ſouth ſide, the ſea-breeze ſhall be at ſouth, and the land-breeze (when it comes in its ſeaſon) at north.

In getting on the coaſt, we endeavour to fall in with Cape Mount or Cape Miſerada, which is about 18 leagues to the E. S. eaſtward thereof; and after that we double Cape Palmas (whence as aforeſaid, the land tends away E. by N.) the current near the ſhore ſets upon that point down into the Bite. But in getting off, we as much attempt, if poſſible, to lay hold of St. Thomas; and thence to run to the ſouthward of the line, perhaps 3 or 4 degrees; for the further ſoutherly we go, the ſtronger we find the gales, and more beneficial for getting off the African coaſt; but thoſe who keep to the northward thereof, generally meet with more calms; and conſequently longer voyages enſue. In or about thoſe latitudes we continue, till we are got between 25 and 30 d. to the weſtward of Cape Lopez de Gonſalvo, and then we croſs again to go either for England or the Weſt-Indies. But by the way let me obſerve to you, that when once we are to the weſtward of the ſaid cape, and in ſouth lat. the current ſets northerly, and the wind to 20 degrees of latitude, is at E. S. E. as (to the like number of degrees) on the north ſide of the line it blows at E. N. E. Neither did I ever obſerve any mutation of the currents, unleſs in the tornado-ſeaſon, when

during their blowing, they commonly ſet to windward; tho' perhaps the moon upon full and change, may have the like influence there, as in other places, but I never took any particular notice thereof.

The ſaid tornadoes uſually come in the beginning of April, and ſeldom relinquiſh the Gold Coaſt till July commences, and with frequent viſits make us ſenſible of their qualities. We have ſometimes three or four in a day; but then their continuance is but ſhort; perhaps not above two hours, and the ſtrength or fury (it may be) about a quarter or half an hour; but accompanied with prodigious thunder, lightning, and rain; and the violence of the wind ſo extraordinary, as that it has ſometimes rolled up the lead wherewith the houſes are covered, as cloſe and compactly, as poſſible it could be done by the art of man. The name implies a variety of winds: but the ſtrength of them is generally at S. E. and by ſhips that are bound off the coaſt, they are made uſe of to get to windward.

I ſhall conclude with that moſt worthy obſervation of the ſeaſon wherein the rains begin, which on the Gold Coaſt is about the 10th of April: and this may be generally remarked, from 15 d. N. to 15 d. S. lat. that they follow the ſun within 5 or 6 d. and ſo proceed with him till he has touched the Tropic, and returns to the like ſtation again. This I ſhall illuſtrate by the following example, viz. Cape Corſo caſtle lies in 4 d. 55 N. About the 10th of April the ſun has near 12 d. N. declination. At that time the rains begin, and continue with the inhabitants of that place, until he has performed his courſe to the greateſt obliquity from off the equator, and returned to the like poſition ſouth. The ſame I ſuppoſe may be obſerved, and underſtood of other places within the Tropics.

The

The variation (of which in the year 1680, I made frequent obſervations) was 2 d. 14 m. weſterly: and it generally flows at the aforeſaid place S. S. E. and N. N. W. upon the full and change. The water riſing upon ſpring tides about ſix or ſeven feet up and down.

I remain,

SIR,

From his Majeſty's yard, near Portſmouth, the 5th of June 1698.

Your humble ſervant,

HENRY GREENHILL.

Upon my receipt of this from the gentleman aforeſaid, I wrote to him again, to have his opinion about what I have ſaid concerning the particular longitude, in which it is beſt to croſs the line, in going from Guiney to the Weſt-Indies: and ſo much of his anſwer as concerns this matter was in theſe words.

Mr. GREENHILL's ſecond LETTER.

SIR,

I Do not diſſent from croſſing the line at 35 or 36 d. longitude, weſtward of Cape Lopes, and it may as well be done at 30 d. provided the breezes continue freſh. But, if we have but little winds, we generally run on the ſouth ſide of the line till we reach the diſtance weſt: and then croſſing we ſteer away W. N. W. and W. by N. for Barbadoes.

And this you may obſerve (as I have already hinted to you) that the further we keep to the ſouth-

ward of the line, the freſher, and conſequently more advantageous the breezes are.

I remain,

SIR,

Your obliged friend,

And moſt humble ſervant,

HENRY GREENHILL.

And here I judge it will not be unacceptable to the reader to inſert theſe two other letters from an experienced captain of a ſhip, becauſe they have a general relation to the ſubject I am now upon, as well as to the coaſt of Guiney in particular.

Part of two Letters from Capt. John Covant of Portbury, to a gentleman in London.

LETTER I.

Honoured SIR,

I Have ſent Mr. Dampier's book, which you were pleaſed to ſend me, to Capt. S———. I have gone through it, and find it very well worth my time, being very delightſome, and I believe true.

I have made ſome remarks on it, as having found the like of what he aſſerts, in other places. As vol. 1. p. 200. mention is made of the ſucking-fiſh, or remora (as Mr. Dampier calls it.) Theſe are mighty plenty on the coaſt of Angola and at Madagaſcar, and between Cape Lopes de Gonſalvas and the river Gabon. They are ſhaped as he deſcribes them.

As

As to what he ſaith vol. 1. p. 207. I have found the Indians in the gulph of Florida, offering falſe ambergris to ſale, and particularly in lat. 25 d. where in the year 1693, ſeveral of our men were cheated with it.

What Mr. Dampier ſaith of the lazineſs of the people of Mindanao, vol. 2. p. 4. the very ſame may be ſaid of the people of Loango on the coaſt of Guiney exactly.

Their manner of worſhip, mentioned vol. 2. p. 17. is the very ſame with what I have ſeen at Algier, on the coaſt of Barbary.

The nocturnal dancings uſed by the Hotentotts at the Cape of Good Hope every full and new moon, vol. 2. p. 382. are alſo practiſed by the inhabitants of Loango, Molinbo, and Cabendo.

I ſhall give you the trouble of a ſmall relation of a paſſage to Loango in the year 1693. When we came ſo far to the ſouthward as 2 d. 40 m. N. lat. and 8 d. 25 m. long. weſtward from the Meridian of Lundy, it being the 31ſt of March we had ſmall wind at S. S. W. and S. W. with ſhowers of rain. There we met with prodigious ſhoals of fiſh, conſiſting chiefly of albicores and bonetoes. There were alſo great numbers of ſharks; ſome ten or twelve feet long. For diverſion we catched above an hundred of them at times. The other fiſh we took as we had occaſion freſh and freſh: and one day we caught a barrel of them with empty hooks. Theſe ſhoals of fiſh kept us company till we were under the equator in longitude 4 d. 3 m. eaſtward of the Meridian of Lundy. This was April 27, we had the winds at S. E. and S. E. by E. freſh gales and clear weather; but a mighty leeward current. At the fiſhes parting with us that day, I caught an albicore that weighed 75 ℔s. It is a mighty

mighty ſtrong fiſh, ſo that the fiſhing-craft muſt be very ſtrong to take them.

The city of Loango I find to lie in lat. 4 d. 30 m. ſouth, and long. 18 d. 8 m. eaſtward from the meridian of Lundy; from whence I took my departure, bound for Jamaica, Oct. 7, 1693.

When we find the winds ſouth, ſouth by weſt, and ſouth ſouth weſt, freſh gales, veerable to ſouth weſt and back to ſouth, we ſtand off to the weſtward with larboard tacks on board, till we get 14d. long. to the weſtward of Loango. And there we find the winds veerable from S. S. E. to S.E. freſh gales. When we get 34 d. to the weſtward of Loango, we are then 16 d. weſtward from the meridian of Lundy; and there we find the winds veerable from S. E. by E. to E. by S. and E. and ſo they continue blowing freſh as we ſtill run to the weſtward between the lat. of three and 4 d. ſouth, till we make the I. Fernando de Noronho, which I find to lie in lat. 3 d. 54 m. 30 ſ. South. And by the experience of two voyages have found its long. 40 d. 59 m. weſt from Loango, and 22 d. 51 m. from the meridian of Lundy. This iſland appears with a very high pyramid. And when we come cloſe to it, the pyramid looks like a large cathedral, On the north weſt ſide is a ſmall bay to anchor in. But ſhips muſt come pretty near the ſhore, becauſe it is deep water. Here is plenty of fiſh. And on the iſland is ſome freſh water, and low ſhrubs of trees. We could ſee no living creature on it but dogs. It was formerly inhabited by the Portugueſe; but the Dutch having then war with them, took it, and carried the Portugueſe all away. The body of the iſland I judge to be about four miles long, lying N. E. and S. W. near on the north ſide are ſome rocks, pretty high above water, and many birds, as ſea-gulls and man of war birds

(which

(which are ſomething like our kites in England) I find the current ſets ſtrong to the N. W. The variation very little. From thence I ſteered N.W. with freſh gales S. E. and at E. S. E. in order to croſs the equator, and deſigning to make the iſland Tobago; which by my run from the aforeſaid iſland, I find to lie in lat. 11 d. 33 m. north long. weſtward of Fernando, 28 d. 19 m. $\frac{2}{10}$ The meridian diſtance from Fernando, 1721 miles $\frac{6}{10}$ And by my reckoning or journal, Tobago is weſt from the meridian of the iſle of Lundy 51 d. 10 m. $\frac{2}{10}$. In this paſſage between the ſaid iſlands we find ſtrange rippling and cockling ſeas, ready to leap in upon the ſhips deck, which makes us think the current to be ſtrong: and it ſeems to be occaſioned by the great river on the main land, which is not far from us in this paſſage. Tobago is an high iſland with a brave ſandy bay on the S. W. ſide, where the Dutch had formerly a great fort, till moleſted by the Engliſh in the laſt Dutch war. From this iſland I ſhaped my courſe for Jamaica, and found the N. E. corner to lie in lat. 18 d. north, and in long. weſt from Tobago 13 d. The meridian diſtance from Tobago is 749 miles weſt. In our paſſage we ſaw no land or iſland, till we made the N. E. end of Jamaica, which lies in long. weſt from the meridian of Lundy 64 d. 10 m. and weſt from the city of Loango 82 d. 18 m. I ſhall only add that I am of opinion that the Gallipagos iſlands lie a grear deal further to the weſtward than our hydrographers place them, according as Mr. Dampier hints, v. 1. p. 234. of his voyage round the world.

I am, Sir,

Your moſt humble ſervant,

JOHN COVANT.

Portbury, Oct. 20, 1698.

Part

Part of a ſecond Letter from Capt. Covant, dated from Briſtol, December 10, 1697.

LETTER II.

SIR,

YOURS of the 6th inſtant came to my hands, with the encloſed queries, which I ſhall endeavour to anſwer in part, as far as my memory will aſſiſt me, being now from home, and at a diſtance from my journals, &c.

Anſwers to the Queries.

1. The common trade-winds on the coaſt of Angola, blow from the S. W. to ſouth, till about 12d. long. from the meridian of the iſle of Lundy.

2. I have found them always in the ſame quarter, and not ſubject to ſhift in all the time I have uſed this coaſt; except that at a ſmall diſtance off the ſhore, they are ſometimes a point more to the weſtward.

3. The dry ſeaſon on this coaſt I obſerved to be from the latter end of April to September; though ſometimes intermix'd with ſome pleaſant ſhowers of rain. I cannot be ſo punctual as to the time of the wet ſeaſons.

4. The true ſea-breeze I have commonly found here to be from W. S. W. to W. by S. if it be fair weather: and the land-breeze is at E. by N. but if a tornado happens, it cauſes the wind to ſhift all round the compaſs, and at laſt it ſettles at S. W. which is the former true trade-wind.

I am yours,

JOHN COVANT.

CHAP.

CHAP. VI.

Of STORMS.

Storms leſs frequent, but more fierce between the tropicks. Preſages of their coming. Of norths, the times and places where they blow: ſigns of their approach: N. Banks. A chocolatta north. A north beneficial to ſhips going from Campeachy to Jamaica. A very uncommon way of wearing a ſhip in a north. Of ſouths, the times and places where they blow. A deſcription of a ſouth at Jamaica, and at the Bay of Campeachy: much fiſh killed by that ſtorm. Of hurricanes. A Deſcription of a terrible one at Antigua, where abundance of fiſh and ſea fowls were deſtroyed by it. The difference between north banks and the clouds before an hurricane: the latter adorned with radient colours. Tufoons in the Eaſt Indies the ſame with hurricanes in the Weſt. Of monſoons in the Eaſt Indies A ſtorm, called by the Portugueſe, the Elephanta, which is the moſt violent monſoon of that ſeaſon.

STORMS within the tropicks are generally known to us by ſome name or other, to diſtinguiſh them from other common winds: and though ſtorms are not ſo frequent there, as they are in latitudes nearer the poles, yet are they nevertheleſs expected yearly in their proper months; and when they do come, they blow exceeding fierce, though indeed ſome years they do not come at all, or at leaſt do not blow with that fierceneſs as at other times. And as theſe winds are commonly very fierce, ſo are they but of a ſhort continuance, in compariſon with ſtorms that we meet with in higher latitudes.

In

In the Weſt Indies there as three ſorts, viz. norths, ſouths, and hurricanes: in the Eaſt Indies there are only two ſorts, viz. monſoons and tuffoons.

All theſe ſorts of violent ſtorms, except the norths, are expected near one time of the year; and this is taken notice of by thoſe that have been in any of them, that they give certain preſages of their being at hand, ſeveral hours before they come.

Norths are violent winds, that frequently blow in the Bay of Mexico from October till March: they are chiefly expected near the full or change of the moon, all that time of the year, but they are moſt violent in December and January. Theſe winds are not confined to the Bay of Mexico only, but there they are moſt frequent, and rage with the greateſt violence. They blow on the north ſide of Cuba very fierce too, and in the Gulph of Florida, as alſo about Hiſpaniola, Jamaica, &c. and in the channel between Jamaica and Porto Bello, and in all the Weſt Indian ſea between the iſlands and the main, as high as the iſland Trinidada. But from Jamaica eaſtward, except on the north ſide of the iſland Hiſpaniola, they blow no harder than a pretty briſk ſea-wind. They are here at W. N. W. or N. W. though in the Bay of Mexico they blow ſtrongeſt at N. N. W. and this is the ſeaſon of weſterly winds in theſe parts of the Weſt Indies, as I have before noted in the third chapter of this diſcourſe. I ſhall be moſt particular of them that blow in the Bay of Mexico, and what ſigns they give us before hand.

Commonly before a north the weather is very ſerene and fair, the ſky clear, and but little wind, and that too veering from its proper point, or the common trade-wind of the coaſt, and breathing gently at S. at S. W. and weſt a day or two before the north comes. The ſea alſo gives notice of a

ſtorm,

ſtorm, by an extraordinary and long ebb. For a day or two before a north, there will be hardly any diſcernable flood, but a conſtant ebbing of the ſea. And the ſea fowls alſo before a ſtorm, commonly hover over the land, which they do not at other times uſe to do, in ſuch great flights and numbers. All theſe ſigns concurring, may give any man notice of an approaching ſtorm, but the greateſt and moſt remarkable ſign of a north, is a very black cloud in the north weſt, riſing above the horizon to about ten or twelve degrees: the upper edge of the cloud appears very even and ſmooth, and when once the upper part of the cloud is ſix, eight, ten or twelve degrees high, there it remains in that even form, parallel to the horizon, without any motion; and this ſometimes two or three days before the ſtorm comes: at other times not above twelve or fourteen hours, but never leſs.

This cloud lying ſo near the horizon, is not ſeen but in the mornings or evenings, at leaſt it does not appear ſo black as then; this is called by the Engliſh ſeamen a north bank, and when ever we ſee ſuch a cloud in that part of the world, and in the months before mentioned, we certainly provide for a ſtorm; and though ſometimes it may happen that ſuch a cloud may appear ſeveral mornings and evenings, and we may not feel the effects of it, or but very little, yet we always provide againſt it; for a north never comes without ſuch a foreboding cloud. But if the winds alſo whiffle about to the ſouth, with fair flattering weather, it never fails. While the wind remains at S. S. W. or any thing to the ſouth of the weſt it blows very faint; but when once it comes to the north of the weſt, it begins to be briſk, and veers about preſently to the north weſt, where it blows hard, yet does it not ſtay there long before it veers to the N. N. W. and

there

there it blows ſtrongeſt and longeſt. Sometimes it continues twenty four or even forty eight hours, and ſometimes longer. When the wind firſt comes to the N. W. if the black cloud riſes and comes away, it may chance to give but one flurry, like that of a tornado, and then the ſky goes clear again, and either the wind continues at N. W. blowing only a briſk gale, which the Jamaica ſeamen call a Chocolate North, or elſe it veers about again to the eaſt, and ſettles there. But if when the wind comes to the N. W. the cloud ſtill remains ſettled, the wind then continues blowing very fierce, even ſo long as the black bank continues near the horizon. It is commonly pretty dry and clear, but ſometimes much rain falls with a north: and tho' the clouds which bring rain, come from the N. W. and N. N. W. yet the black bank near the horizon ſeems not to move till the heart of the ſtorm is broke. When the wind ſtarts from the N. N. W. to the N. it is a ſign that the violence of the ſtorm is paſt, eſpecially if it veers to the E. of the N. for then it ſoon flies about to the E. and there ſettles at its uſual point and brings fair weather: but, if it goes back from the N. to the N. W. it will laſt a day or two longer, as fierce as before; and not without a great deal of rain.

When our Jamaica logwood-ſhips are coming loaden out of the Bay of Campeachy in the north ſeaſon, they are glad to have a north. For a good north will bring them almoſt to Jamaica; neither have any of our veſſels miſcarried in one of theſe ſtorms that I did ever here of, though ſometimes much ſhattered; but the Spaniards do commonly ſuffer by them, and there is ſeldom a year but one or more of them are caſt away in the Bay of Campeachy in this ſeaſon: for they do not work their ſhips as we do ours. They always bring their ſhips

too

too under the fore-ſail and mizen, but never under a main-ſail and mizen, nor yet under the mizen alone; but we generally bring to under main ſail and mizen; and, if the wind grows too fierce we bring her under a mizen only; and, if we cannot maintain that, then we balaſt our mizen: which is by riffing and taking up great part of the ſail. If after all this, the wind and ſeas are too high for us, then we put before it, but not before we have try'd our utmoſt, eſpecially if we are near a lee-ſhore. On the contrary, the Spaniards in the Weſt-Indies (as I ſaid before) lie under a fore-ſail and mizen: but this muſt needs be an extraordinary ſtrain to a ſhip, eſpecially if ſhe be long. Indeed there is this convenience in it, when they are minded to put away before it, it is but halling up the mizen, and the fore-ſail veers the ſhip preſently. and I judge it is for that reaſon they do it. For when the wind comes on ſo fierce that they can no longer keep on a wind, they put right afore it, and ſo continue till the ſtorm ceaſeth, or the land takes them up (*i. e.* till they are run aſhore.) I knew two Spaniards did ſo, while I was in the bay. One was a King's ſhip, called the Piſcadore. She run aſhore on a ſandy bay, a mile to the weſtward of the river Tobaſco. The other was come within 4 or 5 leagues of the ſhore, and the ſtorm ceaſing, ſhe eſcaped ſhipwreck, but was taken by Capt. Hewet, commander of a privateer, who was then in the bay. Her main-maſt and mizen were cut down in the ſtorm. Both theſe ſhips came from La Vera Cruz, and were in the north ſide of the bay when firſt the ſtorms took them. And tho' we do not uſe this method, yet we find means to wear our ſhips as well as they; for if after the mizen is hall'd up and furled, if then the ſhip will not wear, we muſt do it with ſome head-ſail, which yet ſome-

times puts us to our ſhifts. As I was once in a very violent ſtorm, ſailing from Virginia, mentioned in my voyage round the world, we ſcudded before the wind and ſea ſometime, with only our bare poles; and the ſhip by the miſtake of him that con'd, broched too, and lay in the trough of the ſea; which then went ſo high that every wave threatned to overwhelm us. And, indeed, if any one of them had broke in upon our deck, it might have foundred us. The maſter whoſe fault this was, raved like a mad man, and called for an axe to cut the mizen ſhrouds, and turn the mizen maſt over board: which indeed might have been an expedient to bring her to her courſe again. Captain Davis was then quarter-maſter, and a more experienced ſeaman than the maſter. He bid him hold his hand a little in hopes to bring her ſome other way to her courſe: the captain alſo was of his mind. Now the main-yard and fore-yard were lowered down a port laſt, as we call it, that is down pretty nigh the deck, and the wind blew ſo fierce that we did not dare to looſe any head-ſail, for they muſt have blown away if we had, neither could all the men in the ſhip have furled them again; therefore we had no hopes of doing it that way. I was at this time on the deck with ſome others of our men; and among the reſt one Mr. John Smallbone, who was the main inſtrument at that time of ſaving us all. Come! ſaid he to me, let us go a little way up the fore-ſhrouds, it may be that may make the ſhip wear; for I have been doing it before now. He never tarried for an anſwer, but run forward preſently, and I followed him. We went up the ſhrouds half-maſt up, and there we ſpread abroad the flaps of our coats, and preſently the ſhip wore. I think we did not ſtay there above three minutes before we gained our point and came down again,

but

but in this time the wind was got into our main-ſail, and had blown it looſe; and tho' the main-yard was down a port-laſt, and our men were got on the yard as many as could lie one by another, beſides the deck full of men, and all ſtriving to furl that ſail, yet could we not do it, but were forced to cut it all along by the head-rope, and ſo let it fall down on the deck.

Having largely treated of norths, I ſhall next give ſome account of ſouths.

South winds are alſo very violent winds. I have not heard any thing of theſe ſorts of ſtorms, but at Jamaica, or by Jamaica ſailors. The time when they blow at Jamaica is about June, July, or Auguſt, months that norths never blow in. The greateſt ſtreſs of wind in theſe ſtorms is at ſouth, from whence its probable they are named ſouths. In what they differ from the hurricanes that rage among the Carribee iſlands, I know not, unleſs in this, that they are more conſtant to one point of the compaſs, or that they come ſooner in the year than hurricanes do; but thoſe ſtorms called hurricanes, had never been known at Jamaica when I was there. Yet ſince I have heard that they have felt the fury of them ſeveral times. But I was at Jamaica when there happened a violent ſouth. It made a great havock in the woods; and blew down many great trees; but there was no great damage done by it. Port Royal was in great danger then of being waſhed away, for the ſea made a breach clear thro' the town; and, if the violence of the weather had continued but a few hours longer, many of the houſes had been waſhed away: for the point of land on which that town ſtands, is ſand; which began to waſh away apace: but the ſtorm ceaſing, there was no further damage. This was in July or Auguſt, in the year 1674.

I was afterwards in the Bay of Campeachy, when we had a much more violent ſtorm than this, called alſo by the logwood-cutters a ſouth. It happened ſometime in June, 1676.

I was then cutting logwood in the weſtern creek of the weſt lagune. Two days before this ſtorm began, the wind whiffled about to the ſouth, and back again to the eaſt, and blew very faintly. The weather alſo was very fair, and the men-of-war-birds came hovering over the land in great numbers; which is very unuſual for them to do. This made ſome of our logwood cutters ſay, that we ſhould have ſome ſhips come hither in a ſhort time; for they believed it was a certain token of the arrival of ſhips, when theſe birds came hovering over the land. And ſome of them ſaid they had lived at Barbadoes, where it was generally taken notice of; and that as many of theſe birds as they ſaw hovering over the town, ſo many ſhips there were coming thither. And according to that rule, they fooliſhly gueſt that here were a great many ſhips coming hither at that time: though 'tis impoſſible that they could imagine there could be the hundredth part of the ſhips arrive, that they ſaw birds fly over their heads. But that which I moſt admired was, to ſee the water keep ebbing for two days together, without any flood, till, the creek, where we lived, was almoſt dry. There was commonly at low water ſeven or eight feet water; but now not above three, even in the middle of the creek.

About four o'cock the ſecond day after this unuſual ebb, the ſky looked very black, and the wind ſprung up freſh at S. E. and increaſing. In leſs than two hours time it blew down all our huts, but one; and that with much labour we propt up with poſts, and with ropes caſt over the ridge, and faſtening

ening both ends to ſtumps of trees, we ſecured the roof from flying away. In it we huddled altogether till the ſtorm ceaſed. It rained very hard the greateſt part of the ſtorm, and about two hours afther the wind firſt ſprang up, the waters flowed very faſt in. The next morning it was as high as the banks of the creek; which was higher than I had ever ſeen it before.

The flood ſtill increaſed, and run faſter up the creek than ever I ſaw it do in the greateſt ſpring-tide; which was ſomewhat ſtrange, becauſe the wind was at ſouth, which is right off the ſhore on this coaſt. Neither did the rain any thing abate, and by ten o'clock in the morning the banks of the creek were all overflown. About twelve at noon we brought our canoe to the ſide of our hut, and faſtened it to the ſtump of a tree that ſtood by it, that being the only refuge that we could now expect; for the land a little way within the banks of the creek is much lower than where we were; ſo that there was no walking through the woods becauſe of the water. Beſides, the trees were torn up by the roots, and tumbled down ſo ſtrangely acroſs each other, that it was almoſt impoſſible to paſs through them.

The ſtorm continued all this day and the night following till ten o'clock: then it began to abate, and by two in the morning it was quite calm.

This ſtorm made very ſtrange work in the woods by tearing up the trees by the roots: the ſhips alſo riding at Trieſt and at One-Buſh-Key, felt the fury of it to their ſorrow; for of four ſhips that were riding at One-Buſh-Key, three were driven away from their anchors, one of which was blown into the woods of Beef-Iſland. And of the four ſhips that were at Trieſt, three alſo were driven from their anchors, one of which was caſt up about twenty

paces

paces beyond high-water mark on the iſland Trieſt. The other two were driven off to ſea; and one of them was never heard of ſince.

The poor fiſh alſo ſuffered extreamly by this ſtorm, for we ſaw multitudes of them either caſt on the ſhore, or floating dead on the lagunes. Yet this ſtorm did not reach thirty leagues to windward of Trieſt; for captain Vally of Jamaica, went hence but three days before the ſtorm began, and was not above thirty leagues off when we had it ſo fierce, yet he felt none of it; but only ſaw black diſmal clouds to the weſtward, as he reported at his return from Jamaica to Trieſt four months after.

I ſhall ſpeak next of hurricanes. Theſe are violent ſtorms, raging chiefly among the Carribee Iſlands; though, by relation, Jamaica has of late been much annoyed by them; but it has been ſince the time of my being there. They are expected in July, Auguſt or September.

Theſe ſtorms alſo, as well as the norths or ſouths, give ſome ſigns of their approach before they come on. I have not been in any one of them myſelf, but have made enquiry of men that have, and they all agree that either they are preceded by flattering unuſual ſmall winds and very fair weather, or by a great glut of rain, or elſe by both rains and calms together.

I ſhall give an inſtance of one that gave ſuch warning. It happened at Antigua in Auguſt 1681. I had the relation of it from Mr. John Smallbone, before-mentioned, who was gunner of a ſhip of one hundred and twenty tons and ten guns, commanded by captain Gadbury.

Before this ſtorm it rained two days exceſſively, then it held up two or three days more; but the ſky was clouded and appeared to be much troubled, yet but little wind. The planters by this, were certain

certain of a hurricane, and warned the ſhip commanders to provide for it, eſpecially captain Gadbury, who had careen'd his ſhip in Muſkito Cove, in St. John's Harbour, but a little before, and by this warning given him by the planters, had gotten his goods on board again, which though all he had, yet was but about half his loading of ſugar, moloſſes and rum. He alſo moored his ſhip as ſecure as he could, with all his cables and anchors, beſides ſome cables which he had made faſt aſhore to great trees. And about ſeven o'clock that evening that the ſtorm came, he dreading it, went aſhore with all his men, and retired into a poor planter's houſe about half a mile from the ſhore. By that time he and his men were arrived at the houſe, which was before eight o'clock, the wind eame on very fierce at N. E. and veering about to the north and north weſt, ſettled there, bringing with it very violent rain. Thus it continued about four hours, and then fell flat calm, and the rain ceaſed.

In this calm, he ſent three or four men down to the Cove, to ſee what condition the ſhip was in, and they found her driven aſhore dry on the ſand, lying on one ſide, with the head of her maſt ſticking into the ſand; after they had walked round her and viewed her a while, they returned again to the captain to give him an account of the diſaſter, and made as much haſte as they could, becauſe the wind began to blow hard at ſouth weſt; and it blew ſo violently before they recovered the houſe, that the boughs of the trees whipp'd them ſufficiently before they got thither; and it rained as hard as before. The little houſe could ſcarce ſhelter them from the wet; for there was little beſides the walls ſtanding; for the firſt northerly guſt blew away great part of the ridge and moſt of the thatch. Yet there they ſtaid till the next morning, and then

coming to the ſhip found her almoſt upright; but all the goods that were in the hold were waſhed out, and the ſugar was waſhed out of the caſks. Some of the rum they found, a caſk in one place and a caſk in another: ſome on the ſhore, and ſome half a mile in the woods; and ſome ſtaved againſt the trees and leaked out; for it ſeems there had been a violent motion in the ſea, as well as in the air. For in the beginning of the night when the N. E. guſt raged, the ſea ebbed ſo prodigiouſly, or elſe was driven off ſhore by the violence of the wind, ſo far, that ſome ſhips riding in the harbour in three or four fathom water, were aground; and lay ſo till the S. W. guſt came, and then the ſea came rowling in again with ſuch prodigious fury, that it not only ſet them afloat, but daſh'd many of them to the ſhore. One of them was carried up a great way into the woods; another was ſtrangely hurl'd on two rocks that ſtood cloſe by one another, with her heard reſting on one rock, and her ſtern on the other; and thus ſhe lay like a bridge between the two rocks, about ten or eleven feet above the ſea, even in the higheſt tides; for the tides do uſually riſe here but a little, not above two or three feet, but in theſe hurricanes it always ebbs and flows again prodigiouſly.

It was not the ſhips only that felt the fury of this ſtorm, but the whole iſland ſuffered by it; for the houſes were blown down, the trees torn up by the roots, or had their heads and limbs ſadly ſhattered, neither was there any leaves, herbs or green thing left on the iſland, but all looked like winter. Inſomuch that a ſhip coming thither a little after, that uſed that trade, could ſcarce believe it to be the ſame iſland. Neither did the fury of this ſtorm light only here, for Nevis and St. Chriſtophers had their ſhares alſo; but Mounſerrat felt little of it,

tho'

tho' not above a fortnight after there happened another ſtorm, as violent as this, and raged extreamly there, but did little damage at Nevis and St. Chriſtophers. Antigua had a great ſhare of this too. Captain Gadbury's ſhip, that lay aground before it came, was by it hurled over to the oppoſite part of the harbour, and there thrown dry on the ſand.

The day after the ſtorm, the ſhore was ſtrew'd with fiſh of divers ſorts, as well great as ſmall; ſuch as porpoſes, ſharks, &c. and abundance of ſea fowls were deſtroyed by it.

I would not have any man think that theſe hurricanes, or any other ſtorms, do always give warning of their coming exactly alike; for there may be ſome difference in thoſe ſigns, tho' all of them are plain enough if well obſerved. Beſides, ſometimes they are duplicated, ſometimes only ſingle ſigns, and ſometimes the ſigns may be more viſible and plain than at other times: when by ſome accidental cauſe thoſe ſigns may be leſs viſible by reaſon of ſome high mountain that may be interpoſed between you and the horizon, eſpecially if any hill lies N. E. from you, which is the quarter that hurricanes commonly riſe in.

The clouds that precede a hurricane are different from the north banks in this, that, whereas the clouds preceding norths, are uniform and regular, of an exact blackneſs even from the horizon to the upper edge of it, and that as ſtreight and even as a line ſtretched out. On the contrary, the hurricane clouds tower up their heads, preſſing forwards as if they all ſtrove for precedency; yet ſo linked one within another, that all move alike. Beſides the edges of theſe clouds are gilded with various and afrighting colour, the very edge of all ſeems to be of a pale fire colour, next that of a dull yellow,

and

and nearer the body of the cloud of a copper colour and the body of the cloud which is very thick appears extraordinary black; and it looks altogether very terrible and amazing, even beyond expreſſion. Though I have never been in any hurricane in the Weſt Indies, yet have I ſeen the very image of them in the Eaſt Indies, and the effects have been the very ſame; and for my part I know no difference between a hurricane among the Carribee Iſlands in the Weſt Indies, and a tuffoon on the coaſt of China in the Eaſt Indies, but only the name: and I am apt to believe that both words have one ſignification, which is a violent ſtorm.

I have given a large account of one of theſe in my voyage round the world, volume II. page 86. That gave warning by flattering weather before hand, and a very diſmal cloud, ſet out with ſuch colours as I have before deſcribed, riſing in the N. E. from whence the violence of the firſt guſt came, which was wonderful fierce and accompanied with extraordinary hard rain; then it afterwards fell calm about an hour, and then the wind came about at ſouth weſt, and blew as fierce as it did before at north eaſt; which is much like the hurricane before-mentioned at Antigua, but of a longer continuance than that: beſides, in both places they blow at one time of the year, which is in July, Auguſt or September; and commonly near the full or change of the moon.

Another thing that we muſt alſo take notice of is, that both places are north of the equator, tho' not exactly in one latitude.

But of theſe tuffoons I ſhall ſay no more now, having deſcribed them particularly in my voyage to Tonquin, vol. II. p. 205.

The monſoons in the Eaſt Indies are the next to be treated of; by which I do not mean the coaſting

ing trade-wind, ſo called, which I have already deſcribed in p. 21. of this diſcourſe; for tho' monſoon is a general word for the wind there, diſtinguiſhed by the eaſt or weſt, according to the points from whence they blow; yet it ſometimes alſo ſignifies a ſtorm, as I now take it. And it is eaſy to be underſtood, when it is uſed in reference to the trade wind, or when ſpoken of a ſtorm; for if applied to a ſtorm, it is expreſſed by ſome epithet going before; as violent, terrible, &c. without any diſtinction of eaſt or weſt, which is commonly uſed in ſpeaking of the trade-wind.

Theſe monſoons or ſtorms on the coaſt of Coromandel are expected either about April or September, which are accounted the two ſhifting months. For in theſe two months the winds begin to ſhift and turn from that point, on which they have blown ſeveral months before, to the contrary points of the compaſs, as from eaſt to weſt, or the contrary: but commonly this ſhift is attended with a turbulent ſky, which ends in a violent ſtorm of wind, or exceſſive rains, or both: and this is called alſo the breaking up of the monſoon. It was in one of theſe that I paſt from Nicobar iſland to Sumatra, mentioned in my voyage round the world, vol. II. p. 164.

The September monſoons are generally more violent than theſe laſt: yet by the account I have lately had from Fort St. George, they have ſuffered very much by one of the April monſoons (if it may be ſo called) for it came before its uſual time, even before it could be expected.

As for the September monſoons, though the time of the year is ſo well known, and the warnings of their approach almoſt certain; yet our Eaſt India merchants have had very conſiderable loſſes there; for the ſtreſs of the winds blow right in upon the ſhore,

ſhore, and often hurries the ſhips from their anchors, and toſſes them in a moment on the ſandy bay.

Indeed the want of a ſecure place to ride in, is the greateſt inconvenience of that factory, a place doubtleſs deſigned by the Engliſh from its original to be the center of the trade of theſe parts. For all our factories, and the trade in general, eaſt from Cape Comorin, are now ſubordinate to this.

The Dutch had once a place of conſequence, called Pallacat on this coaſt, about 20 leagues to the north of it; but they withdrew moſt of their families and effects from thence in the year 1691, mentioned in my voyage round the world, vol. II. p. 364. And it is very probable that theſe raging winds might be one cauſe of this their deſerting it: whatever was the motive of ſettling here; for they have ſecure harbours, and roads enough in India, which we to our great diſadvantage very much want.

But to return to the monſoons.

Theſe (as I have told you) blow fierceſt in September; and, as I have been informed, blow on ſeveral points of the compaſs.

The ſtormy monſoons on the Mallabar coaſt differ from theſe on the coaſt of Coromandel, in that they are more common, and laſt even from April to September, which is as long as the common weſt monſoon laſts, though not ſo frequent and laſting in the beginning of the monſoon, as towards the latter end.

The months of July and Auguſt afford very bad weather, for then there is hardly any intermiſſion, but a continued troubled ſky full of black clouds which pour down exceſſive rains, and often very fierce winds. But towards the breaking up of the monſoon, they have one very terrible ſtorm, called by

by the Portugueſe the Eliphanta, which concludes the bad weather. For after that they put to ſea without fear of any more ſtorms that ſeaſon.

Theſe violent winds blow directly in upon the ſhore; and they dam up the harbours on this coaſt, eſpecially that of Goa, ſo that no ſhips can go in or come out then; but after the violent winds are paſt, the channel opens again, and ſo continues till the next ſeaſon.

This relation I had from a very ingenious gentleman who was at Goa during the bad weather.

I ſhall only take notice that theſe ſtorms are alſo at the ſame time of the year, when the hurricane ſouths are in the Weſt-Indies, and the tuffoons on the coaſts of China, Tonquin, Cochinchina, and Cambodia in the eaſtern parts of the Eaſt-Indies, and that all theſe places are to the north of the equator.

CHAP.

CHAP. VII.

Of the SEASONS *of the* YEAR.

The wet and dry ſeaſons on the north ſide of the equator, and on the ſouth of it. Places famous for much dry weather, as part of Peru and Africa. A compariſon between thoſe coaſts. Of raining coaſts, as Guiney. Why Guiney more ſubject to rains than the coaſt of Brazil. The time of ſugar-making. The ſeaſons at Surinam. Bays more ſubject to rain than head-lands. Several inſtances of this, as at Campeachy, Panama, Tonquin, Bengal, &c. Mountains more ſubject to rains than low-lands; an inſtance of this at Jamaica. The iſle of Pines near Cuba, a wet place. So is alſo Gorgonia in the South-ſeas. The manner how the tornadoes ariſe.

AS ſummer and winter are the two moſt different ſeaſons in our climate; ſo the dry and the wet are within the torrid zone; and are always oppoſite to each other. They are often called by Europeans winter and ſummer, but more generally dry and wet.

Theſe ſeaſons on each ſide of the equator, are as different as the ſeaſons of ſummer and winter are in temperate climates, or near each pole. For as it is ſummer near the north pole, when it is winter near the ſouth pole, and the contrary: ſo when it is fair and dry weather north of the equator, it is bluſtering and rainy weather ſouth of it, and the contrary, except within a few degrees of the line, and that in ſome places only.

There is alſo this difference between the torrid and temperate zones, either north or ſouth of the equator; that when it is fair and dry weather in the one, it is winter in the other: and when it is wet in the

the one, it is ſummer in the other. I ſpeak now of places lying on the ſame ſide of the equator: for as the ſun when it paſſes the equinox, and draws towards either of the tropics, begins to warm their reſpective poles, and by how much the nearer he approaches, by ſo much is the air without the tropics clear, dry, and hot. On the contrary, within the torrid zone (tho' on the ſame ſide of the line) the farther the ſun is off, the dryer is the weather. And as the ſun comes nearer, the ſky grows more cloudy and the weather more moiſt: for the rains follow the ſun, and begin on either ſide of the equator, within a little while after the ſun has croſt the equinox, and ſo continue till after his return back again.

The wet ſeaſon on the north ſide of the equator in the torrid zone, begins in April or May, and ſo continues till September or October.

The dry weather comes in November or December, and continues till April or May.

In ſouth latitudes the weather changes at the ſame times, but with this difference, that the dry months in ſouth latitude, are wet months in north latitude, and the contrary, as I have ſaid before. Yet neither do the wet or dry ſeaſons ſet in or go out exactly at one time in all years; neither are all places ſubject to wet or dry weather alike. For in ſome places it rains leſs than in others; and conſequently there is more dry weather. But generally places that lie under the line, or near it, have their greateſt rains in March and September.

Head-lands or coaſts that lie moſt expoſed to the trade-winds have commonly the beſt ſhare of dry weather. On the contrary, deep bays or bendings of the land, eſpecially ſuch as lie near the line, are moſt ſubject to rains. Yet even among bays or bendings, there is a great deal of difference in the weather

weather as to dry or wet; for the weather, as well as the winds ſeem to be much influenced by accidental cauſes; and thoſe cauſes themſelves, whatever they are, ſeem to be ſubject to great variation.

But to proceed with matter of fact; I ſhall begin with the dryeſt coaſts; and firſt with that of Peru, from 3 d. S. to 30 d. S. There it never rains, neither at ſea for a good diſtance off ſhore, as for 250 or 300 leagues; no nor on the ſhore for a conſiderable way within land; though exactly how far I know not; yet there are ſmall miſts, ſometimes in a morning for two or three hours; but ſeldom continuing after ten o'clock; and there are dews alſo in the night.

This coaſt lies N. and S. it has the ſea open to the weſt, and a chain of very high mountains running a long ſhore on the eaſt, and the winds conſtantly ſoutherly, as I ſaid before in the ſecond chapter of winds

In which head I have made a compariſon as well of the winds on the coaſt of Africa in the ſame lat. as of the lying of the coaſts. Only there is this difference, that the coaſting trade-winds on the American ſide do blow further from the land than thoſe on the African ſide. Which difference may probably ariſe from the diſproportion of the mountains that are in the two continents; for it is known that the Andes in America are ſome of the higheſt mountains in the world, but whether there are any on the continent of Africa in thoſe latitudes ſo high, I know not. I have not heard of any, at leaſt none ſuch are viſible to ſeamen.

I come now to ſpeak of the weather on the African coaſt, which though it is not ſo dry as the coaſt of Peru, yet is it the next to it. The weather there is very dry from March till October, which is the dry ſeaſon.

The

The rainy ſeaſon, which is from October till March is moderate, without that exceſs that is in moſt other places in thoſe latitudes; ſo that the wetteſt ſeaſon can only be called ſo from ſome gentle ſhowers of rain.

There are ſome tornadoes, but not ſo many as are in any other places both of the Eaſt and Weſt-Indies, the Peruvian coaſt excepted. And, if the height of the andes are the cauſe that the true E. breeze does not take place in the Pacific-ſea, within 200 leagus diſtance from the ſhore, when yet the trade blows within 40 leagues of the African coaſt; that coaſt may perhaps be ſuppoſed to want ſuch high mountains. And, if thoſe American mountains do ſtop the winds from their career, why may they not as well break the clouds before they reach near the ſhore, and be the cauſe of the dry weather there? And ſeeing both coaſts do lie alike, and the wind is alike; why ſhould not the weather be the ſame; were it not for the diſproportion between the mountains of theſe coaſts? For the eaſt ſide of thoſe mountains are ſupplied with rain enough, as may be known by the great rivers that diſembogue from thence into the atlantic ſea; whereas the rivers on the South-ſea coaſt are but very few and ſmall; ſome of which do wholly dry away for a good part of the year; but, yet they conſtantly break out again in their ſeaſons, when the rains in the country do come, which always fall on to the weſt ſide of thoſe mountains, and this is about February.

As I have ſpoken before of dry coaſts, ſo now I ſhall ſpeak of rainy ones. I ſhall begin with the coaſt of Guiney, from Cape Lopos, which lies one degree ſouth, taking in the bite or bending of the land, and all the coaſt weſt from thence, as far as Cape Palmas.

This is a very wet coaſt, ſubject to violent tornadoes and exceſſive rains, eſpecially in July and Auguſt: in thoſe months there is ſcarce any fair day. This coaſt lies all of it very near the equator, and no where above 6 or 7 d. diſtance; ſo that from its neareſt to the equator only, we might probably conjecture that it is a rainy coaſt; for moſt places lying near the line are very ſubject to rains: yet ſome more than others; and Guiney may be reckoned among the wetteſt places in the world. There may be places where the rains continue longer, but none are more violent while they laſt.

And as its nearneſs to the line may be a great cauſe of its moiſture; ſo by its ſituation alſo one would gueſs that it ſhould be ſubject to a great deal of rain; becauſe there is a great bite or bending in of the land, a little to the north of the line; and from thence the land ſtretcheth weſt parallel with the line. And theſe circumſtances ſingly taken, according to my obſervations do ſeldom fail, but more eſpecially where they both meet. Yet there may be other cauſes that may hinder thoſe effects, or at leaſt ſerve to allay the violence of them, as they do on ſome other coaſts. I ſhall only inſtance in the oppoſite coaſt of America between the north cape, which lies north of the equator, and Cape Blanco on Brazil, in ſouth latitude. Now this land lies much after the form of the coaſt of Guiney, with this difference, that one coaſt lies in ſouth lat. the other lies north of the equator, both of theſe promontories lay parallel with the equator, and there is not much difference in their diſtance from it; but that which makes the difference is, that one juts out weſtward the other eaſtward; and ſo one is the very weſtermoſt land of the continent of Africa, the other is the eaſtermoſt land of the continent

continent of America: the one has only an eddy wind, which ſeems to me to be the effect of two contrary winds: the other coaſt lies open to the trade, and never wants a breeze. And the former is troubled with tornadoes and violent rains during the wet ſeaſon, which is May, June, July, Auguſt and September: but the extreameſt wet months are July and Auguſt, when it rains in a manner continually. April and October alſo ſometimes are wet months.

The other coaſt on the American continent, which lies open to the E. and N. E. or S. E. and which enjoys the freer trade-wind, is leſs ſubject to rain; only as it lies near the line, it has its part, but not to exceſs, nor in any compariſon with Guiney. And as the line is to the north of it, ſo its wet months are from October till April, and the dry ſeaſon from April to October. And theſe ſeaſons reach even to ſix or ſeven degrees north of the line: which I do not know to be ſo in any other part of the world. Indeed Cape Lopos in Guiney, is in one degree ſouth, yet participates of the ſame weather that the reſt of Guiney has, which lies to the north of the line.

Now the reaſon why Europeans account the dry ſeaſon ſummer, and the wet ſeaſon winter, is becauſe the dry ſeaſon is their harveſt time, eſpecially in our plantations, where we chiefly make ſugar, for then the canes are as yellow as gold. They have then indeed leſs juice, but that little there is, is very ſweet. Whereas in the wet ſeaſon, tho' the canes are ripe, and come to their maturity; yet they do not yield ſuch quantities of ſugar, neither is it ſo good, though the pains in boiling it be alſo greater. Therefore in northen climates, as all our plantations are in, they commonly begin to work about making ſugar at Chriſtmas, after the dry ſeaſon has

brought the canes to a good perfection. But in ſouth climates, as on the coaſt of Brazil, they begin to work in July. Some places there are in north latitudes alſo near the line, where the weather bears time with the ſeaſons in ſouth lat. as at Surinam, which tho' it is in north latitude, yet are the ſeaſons there the ſame as in ſouth latitudes; but I know not ſuch another inſtance any where. And though the dry ſeaſon is the time to gather in the canes, and the wet ſeaſon to plant; yet are they not ſo limited as to make uſe only of theſe ſeaſons for either, but do it chiefly for their beſt convenience; for they may plant at any time of the year, and that with good ſucceſs, eſpecially after a moderate ſhower of rain, which often happens even in the dry ſeaſons.

But to proceed. I have ſaid before that bays have greater quantities of rain than head-lands.

The Bay of Campeachy is a good inſtance of this, for the rains are very great there, eſpecially in the months of July and Auguſt. On the contrary, the coaſt from Cape Catoch, to Cape Conducedo, which lies more expoſed to the trade, has not near the rains as the Bay of Campeachy hath.

The Bay of Honduras alſo is very wet, and all that bending coaſt from Cape Gratia de Dios, even to Carthagena. But on the coaſt of Carraccos, and about Cape la Vela, where the breezes are more briſk, the weather is more moderate. Whereas in thoſe little bays between, there is ſtill a difference: for in the Bay of Mericaya, which lies a little to the eaſt of Cape la Vela, there is much more rain than at or near the cape.

The Bay of Panama alſo will furniſh us with a proof of this, by its immoderate rains; eſpecially the ſouth ſide of it, even from the Gulph of St. Michael, to Cape St. Francis; the rains there are from

April

April till November; but in June, July and Auguſt, they are moſt violent.

There are many ſmall bays alſo weſt from the Bay of Panama, which have their ſhares of theſe wet ſeaſons, as the Gulph of Dulce, Caldera Bay, Amapala, &c. but to the weſt of that, where the coaſt runs more plain and even, there are not ſuch wet ſeaſons; yet many times very violent tornadoes.

The Eaſt Indies has alſo many bays that are ſubject to very violent rains, as the Bay of Tonquin, that of Siam, the bottom and eaſt ſide of the Bay of Bengal. But on the coaſt of Coromandel, which is the weſt ſide of that bay, the weather is more moderate, that being an even, plain, low coaſt. But on the coaſt of Malabar, which is on the weſt ſide of that promontory, the land is high and mountainous, and there are violent rains. Indeed the weſt ſides of any continents are wetter than the eaſt ſides, the coaſt of Peru and Africa only excepted; in the former of which the dryneſs may be occaſioned (as is ſaid before) by the height of the Andes. And it is probable that the violence of the rains near thoſe mountains falls chiefly on the eaſt ſides of them, and ſeldom reaches to their tops: which yet if the rains do they may there be broke in pieces and reach no further. For, among other obſervations, I have taken notice that mountains are ſupplied with more rains than low lands. I mean the low lands bordering on the ſea. As for inſtance, the ſouth ſide of Jamaica beginning at Leganea, and from thence away to the weſtward, as far as Black River, including all the plain land and ſavannahs about St. Jago de la Vega, Old Harbour and Witby Wood ſavannahs. This is a plain level country for many miles, lying near eaſt and weſt, having the ſea on the ſouth, and bounded with mountains on the north.

Thoſe mountains are commonly ſupplied with rain before the low lands. I have known the rains to have begun there three weeks before any has fallen in the plain country, bordering on the ſea; yet every day I have obſerved very black clouds over the mountains and have heard it thunder there. And thoſe very clouds have ſeemed by their motion to draw towards the ſea, but have been checked in their courſe, and have either returned towards the mountains again, or elſe have ſpent themſelves before they came from thence, and ſo have vaniſhed away again, to the great grief of the planters, whoſe plantations and cattle have ſuffered for want of a little moiſture. Nay, theſe tornadoes have been ſo nigh that the ſea-breeze has died away and we have had the wind freſh out of the clouds, yet they have vaniſhed, and yielded no rain to the low parch'd lands.

And I think that the want of ſeaſonable ſhowers is one of the greateſt inconveniencies that this part of the country ſuffers, for I have known in ſome very dry years, that the graſs in the ſavannahs has been burned and withered for want of rain, and the cattle have periſhed thereby for want of food. The plantations alſo have ſuffered very much by it; but ſuch dry ſeaſons have not been known on the north ſide of the iſland where the mountains are bordering on the ſea, or at leaſt but a little diſtance of it. For there they are ſupplied with ſeaſonable ſhowers, almoſt all the year, and even in the dry time itſelf, near the full and change of the moon. But in the wet ſeaſon, the rains are more violent, which is their inconvenience.

As for the vallies in the country, they are not ſubject to ſuch draughts as the plain land by the ſea, at leaſt I have not obſerved it myſelf, nor have heard it mentioned by others.

The

The iſle of Pines near Cuba is ſo noted a place for rain that the Spaniards inhabiting near it on Cuba, ſay that it rains more or leſs every day in the year, at one place or other. It is alſo generally ſpoken and believ'd by privateers, for it has been often viſited by them. I have been there myſelf, but cannot confirm the report. However, it is well known to be a very wet and rainy place.

It is but a ſmall iſland of about nine or ten leagues long and three or four broad; and in the midſt is a high peeked mountain, which is commonly clouded; and the privateers ſay that this hill draws all the clouds to it; for if there is not another cloud to be ſeen any where elſe, yet this hill is ſeldom or ever clear.

Gorgonia, in the ſouth ſeas, has alſo the ſame report. It is much ſmaller than Pines. I have mentioned it in my voyage round the world, vol I. page 305.

This iſle lies about four leagues from the main; but the iſle of Pines not above two, and is much bigger than it. The main againſt Gorgonia is very low land, but Cuba near Pines is pretty high, and the mountain of Pines is much larger and higher than the hill of Gorgonia, which is yet of a good height, ſo that it may be ſeen ſixteen or eighteen leagues off; and tho' I cannot ſay that it rains every day there, yet I know that it rains very much and extraordinary hard.

I have been at this iſle three times, and always found it very rainy, and the rains very violent. I remember when we touched there in our return from captain Sharp, we boiled a kettle of chocolate before we clean'd our bark; and having each man his callabaſh full, began to ſup it off, ſtanding all the time in the rain; but I am confident not a man among us all did clear his diſh, for it rained ſo faſt

and ſuch great drops into our callabaſhes, that after we had ſupped off as much chocolate and rain water together as ſufficed us, our callabaſhes were ſtill above half full; and I heard ſome of the men ſwear that they could not ſup it up ſo faſt as it rained in; at laſt I grew tired with what I had left, and threw it away, and moſt of the reſt did ſo likewiſe.

As clouds do uſually hover over hills and mountains, ſo do they alſo keep near the land. I have mentioned ſomething of this in my voyage round the world. vol. I. page 415. where I have ſaid, that in making land we commonly find it cloudy over the land, tho' it is clear every where beſides: and this may ſtill confirm what I have ſaid in the foregoing diſcourſe, that hills are commonly clouded; for high land is the firſt diſcerned by us, and that, as I ſaid before, is commonly clouded. But now I ſhall ſpeak how we find the clouds, when we are but a little way from land, either coaſting along the ſhore, or at an anchor by it. I hope the reader will not imagine that I am going to prove that it never rains at ſea, or but very little there; for the contrary is known to every body, and I have already ſaid in this diſcourſe of winds, in my firſt chapter, that there are very frequent tornadoes in ſeveral ſeas, eſpecially near the equator, and more particularly in the Atlantic ſea. Other ſeas are not ſo much troubled with them; neither is the Atlantic ſo to the north or ſouth of the line; eſpecially at any conſiderable diſtance from the ſhore, but yet it is very probable however, that the ſea has not ſo great a portion of tornadoes as the land has. For when we are near the ſhore within the torrid zone, we often ſee it rain on the land, and perceive it to be very cloudy there, when it is fair at ſea, and ſcarce a cloud to be ſeen that way. And though

we

we have the wind from the ſhore, and the clouds ſeeming to be drawing off, yet they often wheel about again to the land, as if they were magnetically drawn that way: ſometimes indeed they do come off a little, but then they uſually either return again or elſe inſenſibly vaniſh; and that's the reaſon that ſeamen when they are ſailing near the ſhore and ſee a tornado coming off, don't much mind it, but cry, the land will devour it: but however, ſometimes they fly off to ſea; and it is very rare that tornadoes ariſe from thence; for they generally riſe firſt over the land, and that in a very ſtrange manner; for even from a very ſmall cloud ariſing over the top of an hill, I have often ſeen it increaſe to ſuch a bulk, that I have known it rain for two or three days ſucceſſively. This I have obſerved both in the Eaſt and Weſt Indies, and in the ſouth and north ſeas. And it is impoſſible for me to forget how often I have been diſturbed by ſuch ſmall clouds that appeared in the night. 'Tis uſual with ſeamen in thoſe parts to ſleep on the deck; eſpecially for privateers, among whom I made theſe obſervations. In privateers, eſpecially when we are at an anchor, the deck is ſpread with mats to lie on each night. Every man has one, ſome two, and this with a pillow for the head and a rug for a covering, is all the bedding that is neceſſary for men of that employ.

I have many times ſpread my lodging, when the evening has promiſed well, yet have been forced to withdraw before day; and yet it was not a little rain that would affright me then; neither at its firſt coming could I have thought that ſuch a ſmall cloud could afford ſo much rain: and oftentimes both myſelf and others have been ſo deceived by the appearance of ſo ſmall a cloud, that thinking the rain would ſoon be over, we have lain till we were dropping

dropping wet, and then have been forced to move at laſt. But to proceed.

I have conſtantly obſerved, that in the wet ſeaſon we had more rain in the night than the day; for though it was fair in the day, yet we ſeldom eſcaped having a tornado or two in the night. If we had one in the day, it roſe and came away preſently, and it may be we had an hours rain, more or leſs; but when it came in the night, tho' there was little appearance of rain, yet we ſhould have it three or four hours together; but this has commonly been nigh the ſhore, and we have ſeen thick clouds over the land and much thunder and lightning, and to our appearance, there was more rain there than we had; and probably out farther off at ſea, there might be ſtill leſs, for it was commonly pretty clear that way.

CHAP.

CHAP. VIII.

Of TIDES *and* CURRENTS.

The difference between tides and currents. No place in the ocean without tides. Where the tides are greateſt, and where ſmalleſt. Of the tides in the harbour and lagunes of Trieſt, in the Bay of Campeachy. Of thoſe between the capes of Virginia. The tides in the gulph of St. Michael, and the river of Guiaquil, in the ſouth ſea. A miſtaken opinion of a ſubterranean communication between the north and ſouth ſeas, under the iſthmus of Darien. Of the tides at the Gallapagos iſlands; at Guam, one of the Ladrones; about Panama; in the gulgh of Dulce and Necoya river; on the coaſt of Peru; in the Weſt Indies, and at Tonquin; where, and at New Holland, they are very irregular. A gueſs at the reaſon of ſo great an irregularity. Of the tides betwen the Cape of Good Hope and the Red Sea. Of currents; they are influenced by the trade-wind. Inſtances of them at Barbadoes, &c. at Cape la Vela, and Gratia de Dios; Cape Roman; Iſle Trinidado; Surinam; Cape Blanco; between Africa and Brazil. Of counter currents in the Bay of Campeachy, and of Mexico; in the gulph of Florida. Of the Cacuſes. No ſtrange thing for the ſurface of the water to run counter to its lower parts. Of the currents on the coaſt of Angola; eaſtward of the Cape of Good Hope; on the coaſt of India, north of the line, and in the ſouth ſea.

HAVING treated of the winds and ſeaſons of the year in the torrid zone, I now come to ſpeak of the tides and currents there; and by the way note, That,

By

By tides I mean flowings and ebbings of the ſea, on or off from any coaſt. Which property of the ſea ſeems to be univerſal; though not regularly alike on all coaſts, neither as to time nor the height of the water.

By currents, I mean another motion of the ſea, which is different from tides in ſeveral reſpects, both as to its duration, and alſo to its courſe.

Tides may be compared to ſea and land-breezes, in reſpect to their keeping near the ſhore; though indeed they alternately flow and ebb twice in twenty-four hours. Contrarily the ſea-breezes blow on the ſhore by day, and the land-winds off from it in the night; yet they keep this courſe as duly in a manner as the tides do. Neither are the tides or thoſe breezes far from the land.

Currents may be compared to the coaſting trade-winds, as keeping at ſome farther diſtance from the ſhore, as the trade-winds do; and 'tis probable they are much influenced by them.

'Tis a general belief, eſpecially among ſeamen, That the tides are governed by the moon; that their increaſe and decreaſe, as well as their diurnal motions, are influenced by that planet; though ſometimes accidental cauſes in the winds may hinder the true regularity thereof.

We are taught, as the firſt rudiments of navigation, to ſhift our tides, *i. e.* to know the time of full ſea in any place; which indeed is very neceſſary to be known by all Engliſh ſailors, becauſe the tides are more regular in our channel, than in other parts of the world.

But my ſubject being to ſpeak of the tides within or near the tropick, I leave thoſe in places nearer England, to be diſcourſed on by coaſters, who are the only knowing men in this myſtery; they having

ing

ing by experience gained more knowledge in it than others; and that is always the beſt maſter.

I have not been on any coaſt in the world, but where the tides have ebb'd and flow'd, either more or leſs; and this I have commonly obſerved, that the greateſt indraught of rivers or lagunes, have commonly the ſtrongeſt tides. Contrarily ſuch coaſts as are leaſt ſupplied with rivers or lakes have the weakeſt tides; at leaſt they are not ſo perceptable. Where there are great indraughts either of rivers or lagunes, and thoſe rivers or lagunes are wide, though the tide runs very ſtrong into the mouths of ſuch rivers or lagunes, yet it does not flow ſo high, as in ſuch places where the rivers or lakes are bounded in a narrow room, though the tides do run of an equal ſtrength at the mouths or entrances of either. Neither do the tides flow ſo much on or about iſlands remote from the main land, as they do on the coaſts of it.

I ſhall firſt give ſome inſtances of theſe general obſervations, and then proceed to particulars.

The places that I ſhall mention ſhall be ſuch as I have been in myſelf, and where I have made the obſervations before-mentioned: I ſhall begin with the lagune of Trieſt, in the Bay of Campeachy.

This place is very remarkable, in that it has two mouths of a conſiderable bigneſs; the one is about a mile and a half wide, and about two miles thro', before you come to a lagune, which is ſeven or eight leagues long and three wide. The other mouth is ſeven leagues from it, and is about two miles and an half, or three miles wide, and about two miles long, before it opens into a lagune. Beſides within land there are three or four more lagunes leſs than the former.

The tides that flow or ebb in all the lagunes paſs in or out at the two mouths before-mentioned, which

which makes them run very ſwift, inſomuch that the Spaniards have named that great lagune, Laguna Termina, or the lake of tides, becauſe the tides are ſo very ſtrong in thoſe two mouths. Yet, though the tides do run ſo ſwift at the mouths of the lagune, they do not riſe in height proportionable to that ſwiftneſs; for the greateſt tides here do not riſe and fall above ſix or ſeven feet, except forced by extraordinary cauſes, as ſtorms, or the like; of which I have ſpoken before.

I could alſo inſtance in the channel, between the two capes of Virginia, where the tides run very ſwift; yet the floods and ebbs are not proportionable to the ſwiftneſs of the tide between the capes. There are not indeed ſuch lagunes as at Trieſt, in the Bay of Campeachy, but there are many wide rivers, and abundance of ſmall creeks. Beſides, in ſome places there is low-land, which is over-flow'd by the tides; ſo that all the water that runs in with ſuch ſwiftneſs within the capes, is inſenſibly ſwallowed up there.

Theſe are inſtances of ſtrong tides, occaſioned by great indraughts; yet where there is but little riſing and falling of the water in compariſon with the ſtrength of the tides at the mouths of thoſe indraughts. I ſhall next give ſome inſtances of the great indraughts, where the tides flow and ebb much more than in the former places; though the tide at the mouths of thoſe indraughts does not run ſwifter than in thoſe places before-mentioned.

I ſhall only mention two rivers in the ſouth ſea, that I have taken notice of in my voyage round the world, viz. the gulph of St. Michael, and the river of Guiaquil.

In the gulph of St. Michael there are many large rivers, which all diſembogue into a lagune of two or three leagues wide. This lagune is barricadoed from

from the ſea with ſome ſmall, low, mangrovy iſlands, and between them are creeks and channels, through which the tides make their daily paſſes into the lagune, and from thence into the rivers, and ſo back again; many times over-flowing the ſaid iſlands, and leaving the tops of the lower trees above water.

The rivers that run into this lagune are pretty narrow, and bounded on each ſide with ſteep banks, as high as the floods us to riſe, and but very little higher. For at high-water, and on a ſpring-tide, the water is almoſt, or altogether, even with the land.

The lagune at the mouth of the rivers is but ſmall, neither is there any other way for the water to force itſelf into, beſides the lagune and rivers; and therefore the tides do riſe and fall here eighteen or twenty feet.

The river of Guiaquil, in this reſpect, is much the ſame with the gulph of St. Michael; but the lagunes near it are larger. Here the tide riſes and falls ſixteen feet perpendicular.

I don't know of any other ſuch places in all the ſouth ſeas; yet there are other large rivers on the coaſt, between theſe places, but none ſo remarkable for high tides. The great tides in the gulph of St. Michael, have doubtleſs been the occaſion of that opinion, which ſome hold, that there is a ſubterreanean communication between the north and the ſouth ſea; and that the iſthmus of Darien is like an arched bridge, under which the tides make their conſtant courſes, as duly as they do under London bridge. And more to confirm this opinion, ſome have ſaid, that there are continual and ſtrange noiſes made by thoſe ſubterranean fluxes and refluxes and that they are heard by the inhabitants of the iſthmus; and alſo that ſhips ſailing in the bay of

Panam

Panama are toſs'd too and fro' at a prodigious rate. Sometimes (ſay they) they are by the boiling of the water, daſh'd againſt iſlands, and in a moment left dry there, or ſtaved in pieces; at other times they are drawn or ſuck'd up, as it were, in a whirl-pool, and ready to be carried under ground into the north ſeas, with all ſails ſtanding. They have ſaid alſo, that when the tide flows, eſpecially on a ſpring, the iſlands in the bay are all overflowed; nay, and even the country too for a great way together; and then nothing is to be ſeen but the tops of trees. But if this were ſo, 'tis much that I and thoſe that I was with, ſhould not have heard or ſeen ſomething of it: for I paſs'd the iſthmus twice, and was twenty three days in the laſt trip that I made over it; but yet I never heard of any noiſes under ground there. I ſailed alſo in the ſouth ſeas (taking in both times that I was there) near three years; and ſeveral months of it, I was in the Bay of Panama. And after I went away, thoſe of our crew that remained there, ſpent a great deal more time in that bay; yet did they never meet with ſuch ſtrange whirl-pools, but found as pleaſant ſailing there as any where in the world: neither did I ever hear any of the Spaniards or Indians make mention of any ſuch thing in all my converſe with them, which certainly they would have done, if they had ever experienced it, had it been only to terrify us, and frighten us away from their coaſts.

I remember indeed our countryman Mr. Gage, gives ſome hints of theſe ſtrange currents in this bay, in his book, called, A new ſurvey of the Weſt Indies, from page 538 to 440, but I am afraid he took moſt of it upon truſt from others; or elſe he was ſea-ſick all that little voyage; for he gives a very imperfect and lame account of that buſineſs, as if he underſtood not what he wrote. I ſhould diſlike

diſlike his whole book for that one ſtory's ſake, if I did not know that he had wrote candidly upon other matters; but I think I have ſaid enough of this: to proceed then,

As to the great tides, which are reported to be in theſe ſeas, I have given inſtances of them, but they are not ſo great as is reported; neither do they ebb and flow ſo much any where as in the gulph of St. Michael only; where, indeed, they flow over thoſe ſmall, low, mangrove iſlands, at the mouth of the lagune, and leave only the tops of the low trees above water; for thoſe iſlands are very low, neither do they afford any high trees. But, however, the iſlands at the mouth of the gulph, before you come to theſe low ones, are near over-flow'd, yet are they very ſmall and low, in compariſon with other iſlands in the Bay of Panama. And, indeed, ſhould the iſlands in that bay be overflow'd, the city of Panama would ſoon be many yards under water. But ſo far is this from being true, that the Pearl Iſlands, which are very flat and low, are yet never overflow'd. For there the tide riſes and falls not above ten or eleven feet on a ſpring, at the ſouthermoſt end of them, which is almoſt oppoſite to the gulph of St. Michael, and not above twelve or fourteen leagues diſtant from it. And yet there it flows more than it does at or near Panama, or any other place in the bay (except juſt at the mouths of rivers) by two or three feet. Therefore all that report is wholly groundleſs.

But to go on. I have alſo obſerved, that iſlands lying far off at ſea, have ſeldom ſuch high tides as thoſe that are near the main, or as any places on the main itſelf; as for example, at the Gallipagos Iſlands, which lie about one hundred leagues from the main, the tides do not riſe and fall above a foot and a half, or two feet, which is leſs than they do

on the coaſt of the main. For on moſt places of the main it riſes and falls two or three feet, more or leſs, according as the coaſt is more or leſs expoſed to indraughts or rivers.

Guam, one of the Ladrone iſlands, is alſo another inſtance of this. There the tide riſes not above two or three feet at moſt. In the bay of Panama the tides keep a more conſtant and regular courſe than on other places on the coaſts of Peru and Mexico, it was for that reaſon I called them currents in ſome places, mentioned in my voyage round the world, as particularly near Guatulca, on the Mexican continent, in vol. I. page 370) but it was truly a tide (which there I called a current) and it ſets to the eaſtward as the ebb doth to the weſt. The tides there riſe and fall about five feet, as they do on moſt parts of that coaſt.

At Ria Leja they riſe and fall about eight or nine feet.

At Amapala they alſo riſe and fall about eight or nine feet, and the flood there runs to the eaſt, and the ebb to the weſt.

In the gulph of Dulce and Neicoya river, they riſe to ten or elven feet; but on the coaſt of Peru they do not riſe ſo high, eſpecially on all the coaſt, between cape St. Francis and the river Guiaquil; there the flood runs to the ſouth, and the ebb to the north.

At the iſland Plata the tide riſes and falls three or four feet; but from cape Blanco, in about 3 d. ſouth, to 30 d. ſouth, the tides are ſmaller; there they riſe and fall not above a foot and an half or two feet. The flood on this coaſt ſets to the ſouth and the ebb to the north.

In all my cruiſings among the privateers, I took notice of the riſings of the tides; becauſe by knowing it, I always knew where we might beſt hale aſhore

aſhore and clean our ſhips: which is alſo greatly obſerved by all privateers.

In moſt places of the Weſt Indies, the tide flows but little over what is does in our channel.

In the Eaſt Indies alſo the tides are but ſmall on moſt coaſts, neither are they ſo regular as with us.

The moſt irregular tides that I ever met with, are at Tonquin in and about 20 d. north lat. and on the coaſt of New Holland, in about 17 d. ſouth. In both theſe places, the neap tides are ſcarce diſcernable. Thoſe of Tonquin are deſcribed at large by Mr. Davenport, who was employed by Mr. James when he was chief of the Engliſh factors there, to obſerve them: and the whole diſcourſe is publiſhed in the Philoſophical Tranſactions of the Royal Society: whither I refer you.

At New Holland I had two months time to obſerve the tides. There the flood runs eaſt by north, and the ebb weſt by ſouth; and they riſe and fall about five fathom.

In all the ſprings that we lay here, the higheſt were three days after the full or change, and that without any perceptible cauſe in the winds or weather. I muſt confeſs we were ſtartled at it; and though ſome of us had obſerved it in the ſprings, that happened while we lay on the ſand to clean our ſhip, as I have mentioned in my voyage round the world, vol. II. page 141. yet in that ſpring that we deſigned to hail off, in order to go from thence, we all took more particular notice of it than in the preceding ſprings; for many had not taken notice of it before: and therefore the major part of the company, ſuppoſing that was a miſtake in us who had made thoſe former obſervations, expected to hale off the ſhip the third tide after the change; but our ſhip did not float then, nor the next tide neither, which put them all into an amazement, and a conſternation

ſternation too; for many thought we ſhould never have got her off at all, but by digging away the ſand, and ſo clearing a paſſage for her into the ſea. But the ſixth tide cleared all theſe doubts; for the tide then roſe ſo high as to float her quite up; when being all of us ready to work, we hall'd her off; and yet the next tide was higher than that, by which we were now all thoroughly ſatisfied, that the tides here do not keep the ſame time as they do in England.

This I muſt alſo obſerve, That here was no river nor lagune, nor any other indraught on the land near us, that might occaſion theſe great tides; tho' 'tis very probable that the great bending between New Holland and New Guiney, may have both rivers and lagunes, which may cauſe theſe great tides; or elſe there may be a paſſage of the ſea between both places; as it is laid down in ſome draughts: or if neither of theſe, there may be at leaſt a large and deep ſound.

This is the more probable, becauſe of the extraordinary flood that ſets to the eaſtward in all that ſea, between New Holland, and the iſlands lying north of it; which we moſt ſenſibly perceived, when we were near New Holland: and ſuch a tide as this muſt of neceſſity have a greater indraught than barely a river or lagune; and 'tis the more likely ſtill, that this tide ſhould have a paſſage through between New Holland and New Guinea, or at leaſt a deep ſound there; becauſe it keeps along by the main, and doth not run in among the iſlands to the north of it. And beſides, the northermoſt promontory of New Holland ſhoots down almoſt to the line, which ſeems to be a barrier to it on that ſide; therefore it may in reaſon be ſuppoſed to have its paſſage ſome other way, but of this gueſs I have ſaid enough.

In

In the ſtreights of Malacca the flood ſets to the eaſt, and the ebb to the weſt.

I have found the tides at Malacca town, to riſe and fall about ſix feet on a ſpring. I had the experience of two ſpring-tides, when I was captain Minchin's mate, as is before mentioned in my voyage from Achin to Malacca.

On the eaſt ſide of the African coaſt, between the Cape of Good Hope and the Red Sea, the tide keeps its conſtant courſe. The flood runs to the ſouthward, the ebb to the northward. And at a ſpring-tide in the rivers on that coaſt, the tide riſes and falls ſix feet, eſpecially in the river of Natal, in lat. 30 d. ſouth.

I have this relation from Captain Rogers, who is a very ingenious perſon, and well experienced on that coaſt, and is now gone commander of a ſmall veſſel thither to trade.

Having already treated largely of tides, I come now to ſpeak ſomewhat of currents.

Currents and tides differ many ways; for tides run forward and back again, twice every twenty-four hours; on the contrary, currents run a day, a week, nay, ſometimes more, one way; and then it may be run another.

In ſome particular places they run ſix months one way, and ſix months another.

In other places they conſtantly run one way only a day or two, about full moon, and then they run ſtrong againſt the former courſe; and after that, return the ſame way again.

In ſome places they run conſtantly one way, and never ſhift at all.

The force of tides is generally felt near the ſhore; whereas currents are at a remote diſtance, neither are the effects of them ſenſibly diſcerned by the

riſing or falling away of the water, as thoſe of the tides are, for theſe commonly ſet along ſhore.

It is generally obſerved by ſeamen, that in all places where trade-winds blow, the current is influenced by them, and moves the ſame way with the winds, but it is not with a like ſwiftneſs in all places; neither is it always ſo diſcernable by us in the wide ocean, as it is near ſome coaſt; and yet it is not ſo diſcernable neither, very near any coaſt, except at capes and promontories, that ſhoot far out into the ſea; and about iſlands alſo the effects of them are felt more or leſs, as they lie in the way of the trade winds.

I ſhall inſtance Barbadoes for one, and all the carribees may as well be included.

The greater iſlands, as Hiſpaniola, Jamaica and Cuba have only ſome particular capes or head-lands, expoſed to currents, as cape Tiberoon on Hiſpaniola, Point Pedro, and the N. E. point of Jamaica, Cape de Cruz, Cape Corientes, and Cape Antonios on Cuba: but of all the iſlands in the Weſt Indies there are none more ſenſible of currents than Corriſao and Aruba, nor any capes on the continent ſo remarkable for currents as Cape Roman; which ſhoots out againſt the ſea, between thoſe two places, as alſo Cape Coquibaco and Cape la Vela to leeward, all three on the ſame head land; which ſhoots forth far, without any other land on the coaſt.

There is no ſuch head-land till you come toCape Gratia de Dios, which is about two hundred and ſixty leagues to leeward. Indeed, to the eaſtward there is land that tends out almoſt ſo far, within one hundred and fifty leagues of it: viz. the iſland Trinidado and the land againſt it; and there alſo are great currents. But I ſhall firſt ſpeak of the currents between Cape la Vela and Cape Gratia de Dios.

The

The currents at Cape la Vela do ſeldom ſhift, therefore ſhips that ply to windward to get about it, do not ply near the ſhore, but ſtand off to ſea, till they come in ſight of Hiſpaniola, and then back again, till within about ſix or eight leagues of the cape, but not nearer. But in the weſterly wind ſeaſon, which is from October till March, ſhips often meet weſterly winds that laſt two or three days, with which they may run to the eaſtward, without any trouble.

Between Cape la Vela and Cape Gratia de Dios, the currents are much different from what they are againſt the cape: and this ſeems to proceed from the make of the land; for the ſhore between the two capes, runs into the ſouthward, making a great bay; and this bay affords more varieties of winds and currents, than any one part of the Weſt Indies beſides.

Here, in the weſterly wind ſeaſon, the current ſets to the weſtward conſtantly; but ſometimes ſtronger than at other times. At about four leagues off ſhore, you find it, and ſo it continues till you are 20, — 25, — or 30 leagues off. Beyond that you meet with an eaſterly wind; and if there is any current it runs alſo to the weſtward: therefore ſhips that are bound to the weſtward, muſt run off to ſea thirty or forty leagues to get a wind, or elſe if they have but a little way to go, they muſt ply cloſe under the ſhore, that ſo they may anchor when they pleaſe: otherwiſe they will be carried away to the eaſtward, fourteen or ſixteen leagues in a night's time; and that too, though they have a faint eaſterly wind, as frequently they meet with, though 'tis the weſterly wind ſeaſon.

To the eaſt of Cape Roman, as high as the iſland Trinidado, you meet only a ſoaking faint current, ſetting to the weſtward, except only near ſuch

places as ſhoot out fartheſt into the ſea, as about the Teſtegos, which are ſmall iſlands lying to windward of the iſland Margarita. Between thoſe iſlands and the main, you meet with a pretty ſtrong current; therefore it is hard getting to the eaſtward there, but on all the coaſt, between Cape Roman and the head-land, ſhooting out towards the Teſtegos, you may ply up with the land and ſea-breezes.

From thence, till you come as high as the eaſt-end of Trinidado iſle, you meet with an extraordinary ſtrong current.

From the eaſt end of Trinidado, till you come to Surinam, though you meet an eaſterly current, yet it is poſſible to beat up with the land and ſea-breezes.

From Surinam alſo to Cape Blanco, you may turn it up, though to be ſure you'll meet with currents ſetting to the weſt; except near the full of the moon; and then on all the coaſts before-mentioned, we commonly meet with currents, ſetting to the eaſtward; at leaſt then it ſlackens and ſtands ſtill, if it doth not run to the eaſtward. But when you are come as far to the eaſt as Cape Blanco, on the north of Brazil, you meet with a current always againſt you; and ſo from thence ſoutherly, as far as Cape St. Auguſtine.

There is no dealing with this promontory; for it ſhoots out ſo far into the ſea, and thereby lies ſo expoſed to the ſea-breezes and currents, that ſoak down between Africa and Brazil, that it is quite contrary to reaſon to think that there ſhould not alway be a ſtrong current ſetting to the N. W.

I have before hinted, That in all places where the trade blows, we find a current ſetting with the wind, which is not ſo perceptible in the wide ſea as nearer the ſhores; yet even there the force of the wind conſtantly blowing one way, may and probably

probably does move the ſurface of the water along with it.

From hence it may be inferred, that the ſouther-ly winds on the coaſt of Africa, and the true trade between it and Brazil, gently move the ſurface of the ſea with it, and the trade being moſtly at S. E. drives the ſea to the northward, ſlanting in on the coaſt of Brazil; which, being there ſtopped by the land, bends its courſe northerly towards Cape St. Auguſtine; and after it has doubled that great promontory, it falls away more gently towards the coaſt of Surinam, and from thence towards the W. Indies. For after it has doubled that promontory, it has more room to ſpread itſelf, and thereby becomes weaker in motion, being agitated by the trade winds, which to the north of the line, we find commonly blowing at E. N. E. and this ſtill bears the ſea ſlanting down along the coaſt to the weſtward. And probable it is for that reaſon, that we find the current ſetting ſtrongeſt near thoſe headlands before-mentioned. Whereas at Barbadoes, and other of the Carribee iſlands, we find only a ſoaking current, ſuch as ſeems to ariſe only from the conſtancy of the trade-winds blowing there, and not from an original current, from the ſouth part of the atlantic; which, as I ſaid before doubles about Cape St. Auguſtine, and ſo coaſts along pretty nigh the ſhore.

The currents about the iſland Trinidado, and at Corriſao and Aruba, as alſo between them and Cape Roman, ſeem to indicate as much. The currents alſo between Cape Roman, and Cape la Vela indicate the ſame.

From Cape la Vela the currents ſet ſtill to the weſtward, towards Cape Gratia de Dios; but in a direct line, and not borrowing or ſlanting in towards the ſhore. For, as I ſaid before, it is a large bay,

bay, and currents commonly ſet from one headland to another; ſo that bays have ſeldom any; or if they have, they are only counter currents. And theſe counter currents too ſet from one point to another, without interfering with the little bays between. And it is alſo very probable that theſe counter currents, ſuch as we meet with in this bay, in their ſeaſons, after they have ſurrounded the bay, and are got as far to the eaſt as Cape la Vela, wheel off there, and turn about again with the ſtream to the weſtward, like an eddy in a river.

From Cape Gratia de Dios the current ſets away N. W. towards Cape Catoch, and ſo paſſes away to the northward, between Cape Catoch on Jucatan, and Cape Antonio on Cuba.

In the channel between thoſe two capes, we commonly find a ſtrong current ſetting to the northward; and here I have found them extraordinary ſtrong.

On the north ſide of Jucatan, as you paſs into the bay of Campeachy, you meet with a ſmall ſoaking current to the weſtward, even down to the bottom of the Bay of Mexico; but on the north ſide of the Bay of Mexico the current ſets to the eaſtward; and 'tis probable that this is the reaſon, that the Spaniards, coming from La Vera Cruz, keep that ſhore aboard. And it is as probable, that the current, vhich ſets to leeward, on all the coaſt from Cape St. Auguſtine to Cape Catoch, never enters the Bay of Mexico, but bends ſtill to the northward, till it is checked by the Florida ſhore; and then wheels about to the eaſt, till it comes nearer the gulph's mouth, and there joining with the ſoaking current that draws down on the north ſides of Hiſpaniola and Cuba, paſſes altogether with great ſtrength through the Gulph of Florida, which is the moſt remarkable gulph in the world for its currents,

rents, becauſe it always ſets very ſtrong to the north. Yet near the ſhores on each ſide this gulph, there are tides, eſpecially on the Florida ſhore; and ſhips may paſs which way they pleaſe, if they are acquainted.

It has formerly been accounted very dangerous to meet with a north in this gulph; and for that reaſon our Jamaica ſhips to avoid them, have rather choſe to go to the eaſtward, and paſs through the Cacuſes in the ſeaſon that the norths blow. The Cacuſes are ſands that lie off the N. W. end of Hiſpaniola. Thoſe that went from Port Royal in Jamaica had good reaſon for this; for if a north took them at their going out, it would help them forward in their way, which, ſhould they have been going towards the gulph, it would obſtruct them. Then beſides, if a north take a ſhip in the gulph, the wind blowing againſt the current makes an extraordinary ſea, and the waves come ſo thick one after another, that a ſhip cannot poſſibly live in it; yet of late they go through at all times of the year, and if a north takes them in the gulph, they put away right before the wind and ſea, with a ſmall head ſail; yet the current is then as ſtrong or ſtronger than at other times, and forces them back, ſtern foremoſt againſt both wind and ſea; for tho' the ſurface of the ſea is raiſed in waves and driven violently with the winds to the ſouthward, yet the current underneath runs ſtill to the northward; neither is it any ſtrange thing to ſee two different currents at one place and time, the ſuperficial water running one way, and that underneath quite contrary; For ſometimes at an anchor, I have ſeen the cable carried thus by two different ſtreams, the under part having been doubled one way, and the upper part the contrary. But it is certain, in all other parts of the world, the current ſhifts at certain times

times of the year; as in the Eaſt Indies they run from eaſt to weſt one part of the year, and from weſt to eaſt the other part: or as in the Weſt Indies and Guiney, where they ſhift only near a full moon. This is meant of parts of the ſea near any coaſt; yet there are ſtrong currents in the wide ocean alſo, ſetting contrary to the rules beforegoing; I mean againſt the trade, but it is not common.

On the coaſt of Guinea the current ſets eaſt, except at or near a full moon; but to the ſouth of the line from Loango, to 25 or 30 d. the current ſets with the wind from ſouth to north except near the full.

To the eaſtward of the Cape of Good Hope, from 30 d. ſouth, to 24 d. ſouth, the currents from May till October ſet E. N. E. and the winds then are at W. S. W. or S. W. but from October till May, when the winds are between the E. N. E. and E. S. E. the currents run to the weſt. Theſe currents are thus found from five or ſix leagues to about fifty. Within five leagues off the ſhore you have the tide, and not a current; and being paſt fifty leagues off ſhore, the current either ceaſeth quite or is imperceptible.

On the coaſt of India, north of the line, the current ſets with the monſoon, but does not ſhift altogether ſo ſoon, ſometimes not by three weeks or more, and then never ſhifts again till after the monſoon is ſettled in the contrary way. As for example, the weſt monſoon ſets in the middle of April, but the current does not ſhift till the beginning of May: ſo when the eaſt monſoon ſets in about the middle of September, the current does not ſhift till October.

In the ſouth ſeas on the coaſt of Peru, the current

rent ſets from ſouth to north, even from 30 d. to to the line, and to 3 or 4 d. north of it.

At the Gallapagos Iſlands we found a ſoaking current, not very ſtrong, but ſo ſtrong that a ſhip could get very little by turning; and it is probable that nearer the main, they are ſtronger becauſe of the conſtant ſoutherly winds.

The moſt remarkable places for currents in the ſouth ſeas, are cape St. Francis, cape Paſſao, cape St. Laurence and cape Blanco. This laſt has commonly very ſtrong currents ſetting to the N. W. which hinders ſhips mightily; and the more becauſe it is a very windy place; ſo that many times ſhips are not able to carry their top-ſails; and then it is but bad plying to windward againſt a current. I had not ſo much experience of the Mexican coaſt, becauſe we commonly kept within the verge of the tides. But on the coaſt of Guatamala, in the lat. of 12 d. 50 m. and 13 d. we had a current ſetting S. W. and it is probable that here alſo the current ſets with the winds. For, as it is before noted, the currents on all coaſts ſet as the coaſting trade does.

And thus have I finiſhed what my own experience, or relations from my friends, have furniſhed me with on this uſeful ſubject of Winds, Tides, Currents, &c. which I humbly offer, not as a compleat and perfect account, but as a rude and imperfect beginning or ſpecimen of what may better be done by abler hands hereafter. And I hope this may be uſeful ſo far as to give a few hints to direct the more accurate obſervations of others.

F I N I S.

A

GENERAL INDEX

To the THREE VOLUMES of

DAMPIER's VOYAGES.

A

ACapulco, its remarkable land 376 vol. 1.
—— town, port and caſtle, 377-8-9 vol. 1.
——— trade and courſe of it, 377-8-9, 411, vol. 1
Acapulco ſhip, its courſe 378, 388, 393, 416, 423, vol. 1. 29, vol. 2.
——— and why 412. vol. 1.
——— aimed at by the privateers, 376, 388. v. 1 63 vol. 2.
——— but miſſed 393, 435 vol. 1
——— like to be loſt on a ſhoal, 435 vol. 1 60, vol. 2.
——— taken by Cavendiſh 393, vol. 1.
Accountants, bad and good, 271, vol. 1.
Achars, pickles what and where, 66, vol. 2.
Achin kingdom, 286, vol. 2.
—— rains and floods, 314, vol. 2.
—— winds, 39, vol. 3. W*.
—— road, iſlands and channel lying off it, 287, vol. 2.

* W. refers to the diſcourſe on winds, &c. at the end of vol. 3.

Achin, ſoil and vegetables, 288-291, vol. 2
—— animals, 292, vol. 2.
—— Malayan inhabitants, 293, vol. 2.
—— Features, habit, &c. 294, vol. 2.
—— Arts and trades, 295, vol. 2.
—— Proes, 145, vol. 2.
—— Coire cables, 427, vol. 1.
—— Coins, ſums and weights, 297-8, vol. 2.
—— Mahometan learning & religion, 22, 159 v. 2
—— Laws and puniſhments, 304-6 vol. 2
—— Government by a queen & oromkeys, 306 v.2
—— Election of the queen, 308 vol. 2
—— War upon it, 309-312, vol 2
—— Oromkeys have the real power, 307 vol. 2
—— Commons moſtly ſlaves 307 vol. 2
—— City and buildings 294-5 vol. 2
—— Merchant-ſtrangers there 295 vol. 2
—— China camp, Chineſe and their trade 301 v. 2
—— Price of nutmegs there 317 vol. 2
—— Plenty of gold 316, 353 vol. 2
—— Gold mines 298 vol. 2
Acoſta, J.d' impriſonment and why 97 vol. 1
Adds, tools where uſed 11, 345 vol. 2.
Africa, its coaſting trade-winds, W. 12, 20, 103 vol. 3.
—— not ſo broad as the Peruvian, and why W. 78, 79
—— Its ſea and land breezes W. 24, 29, 50, &c.
—— Its weſt coaſt where and when dry W. 78, 79, 83
—— Tides on its eaſt coaſt W. 99.
—— Currents W. 107
—— Ambergris 207 vol. 1
—— Seals 224 vol. 1
Aguala wood, what and and where 178 vol. 2
Ague, where frequent 13 vol. 2.

Air, good where and when 199, 242, 319, 353, 430 vol. 1
—— bad where and when 287, 319, 356, 430 v. 1
—— bad where there are gold mines 287, 330 v. 1
—— ſulphurous, when 265 vol. 1.
—— near land, ſick men die coming into 247 v. 1
Albicore fiſh, where found W. 55
Alacranes iſlands, animals and vegetables 26 vol. 1
Alforees, Mindanayans 4, 16, 115 vol. 2
Algatrane, a ſort of tar 267 vol. 1.
Algatroſs, a bird where 373 vol. 2
Algatroſs, a rock 375 vol. 1
Aligator deſcribed 36, 76, 83 vol. 1
——— where found 77, 388 vol. 1
——— their fleſh and eggs muſky 77, vol. 1
——— eaten and but ſeldom 77 vol. 1
——— their muſk kernels 77 vol 1.
——— good for dropſies 388 vol. 1.
——— dogs fearful of them 78 vol. 1
——— Iriſhman endangered by one 79 vol. 1
——— Campeachy ones leſs fierce than others 83 vol. 1
——— leſs fierce than the crocodile 79 vol. 1
——— differs from the crocodile 77, 78 vol. 1
All Saints bay in Brazil 33, 61 vol. 3
Almanack of Mexico, account in it 388 vol. 1
——— of Tonquin and China 228 vol. 2
Almond milk, where uſed 314 vol. 2
Alms of miſſionaries 263 vol. 2
Aloes, lignum, whence 178 vol. 2
Alta Vela C. its winds 35 W. vol. 3
Alvarado, town, fort, &c. deſcribed 45, 123, 130 v. 1
——— taken by privateers 124, 128 vol 1
——— its fine parrots 128 vol. 1
Amapalla, gulph and towns 256 260 vol. 1
——— its trade winds 96 W. vol. 3
Ambergris, where found 206 vol. 1

——— where to trade for it 142 vol. 2
America, its breezes 35 W. vol. 3
——— ſavannahs 221 vol. 1
——— its diſtance from Aſia too great 420 vol. 1
——— its diſtance from Africa too little 421 v. 1
——— its ſavages deſcribed 154 vol. 2
——— natives deſirous of trade 282 vol. 2
——— natives paint themſelves 379 vol. 2
——— wear ſkins 380 vol. 2
America, ſouth weſt coaſt rocky 224 vol. 1
——— its fiſh and ſeals 224 vol. 1
——— coaſting trade wind 78 W. vol. 3
——— blooms or hot blaſts 371 vol. 2
Amoy (anhay) in China 90 vol. 2
Amphiſbæna, ſnake deſcribed 54 vol. 3
Amplitude, morning and evening 64 vol. 3
Anatta (otta) a dye 10, 114, 360 vol. 1
——— value and how uſed 361 vol. 1
Anamabao, or Anabao 112 vol. 3
Anchovy, a pickled fiſh like it 196 vol. 2
Audeman's, iſlands 146 vol. 2
Andes, mountains of Chili 228 vol. 1
——— cauſe deep ſeas 96 Vol. 2
——— break the true general trade winds 78 W. vol. 3
——— catch the rains 83 W. vol. 3
Andero St. iſland deſcribed 162 vol. 1
Angels port deſcribed 371 vol. 1
Angola, coaſt and winds 12, 13, 14, 27, 38, 58 W. vol. 3
Anhay, ſee Amoy
Ann's St. in Campeachy 119 vol. 1
——— cape, in Guiney 8, 16, 38 W. vol. 3
Anniſeed, a berry ſo called by the Dutch 231 v. 2
Ants of ſeveral ſorts 66, 67 vol. 1
Ant bears deſcribed 62, 63 vol. 1

Ante, or mountain cow 103 vol. 1
Antigua harraſſed by Indians 8 vol 1
——— its currents 101, 105 W. vol. 3
——— hurricanes there 68, 72 W. vol. 3
Anthropophagi, or men-eaters 154 vol. 2
Antonio cape, in Cuba 12 vol. 1
——— its currents 101 W. vol. 3
Anvil, what uſed inſtead of it 11 vol. 2
Apples, where 374 vol. 2
Apples, pine, fruit 8, 144, 423 vol. 1
Arabick, where uſed and ſtudied 9, 302 vol. 2
Aracan, China earthenware sold there 231 vol. 2
Arack, what and where 48, 92, 221, 246, 332 v. 2
——-- drank with hen's blood 25 vol. 2
——-- a drug like anniſe infuſed in it 232 vol. 2
Arek, tree, and nut (miſcalled betle) 449 vol 1
——— where and how uſed 442-3-4 vol. 1. 7, 14, 32, 36, 128, 222 vol. 2
Arica town and bay 134 vol. 1. 14 W. vol. 3
Ariſah, fruit, deſcribed 48 vol. 3
Arms, ſilver hoops worn on them 43 vol. 2
Arms kept neat 238-9 vol. 2
Armour of buffalo's hide 104 vol. 2
Armada, Spaniſh, arrival at Portobello 304 vol. 1
Armadillo, animal, deſcribed 64 vol. 1
Arrows headed with flint 220 vol. 1
——— poiſoned 108 W. vol. 3
Arts liberal, where ſtudied 228 vol. 2
Artificers 10, 11, 228, 301, 345 vol. 2
Aruba iſland deſcribed 181 vol. 1
——- its currents 101-4 W. vol. 3
——- its water breeds worms in the body 91 vol. 1
Aſcention iſland 67 vol. 2. 152 vol. 3
——— breeding place for turtles 241 vol. 1 67 vol. 2
Aſh iſland (vacca) 132 vol. 1

Aſia, reckoned too broad 420 vol. 1
Aſſes where 208 vol. 1
—— wild finely ſtriped 375 vol 2.
Atlantick ſea reckoned too broad 421 vol. 1
Atlantick ſea, its trade winds 3, 5, 11 W. vol. 3
———— calms and tornados on the eaſt ſide, &c. 6, 7, 8, 86 W. vol. 3
Aves, iſland, deſcribed 183 vol. 1
Auguſtin C. St. in Brazil 103-5 W. vol. 3
———— of Florida 306 vol. 1
———— of Madagaſcar 354 vol. 2
Avogato pear 337 vol. 1.
Auſtralis, Terra, incognita 29 vol 2
Axes, what and where uſed 11, 153 vol 2.
Aynam iſle deſcribed, &c. 306 vol. 1
Azimuth compaſs, how uſed 373 vol. 2

B.

Bacalao, or rock fiſh 225, 390 vol. 1
Bahama iſle, ambergris there 206 vol. 1
Bahar, what 298 vol. 2
Bahia de todos los Santos, in Braſil 34, 62 vol. 3
Balachaun, a pickle 196 vol. 2
Baldivia 218, 326 vol. 1.
Bamboo, where and how uſed 151, 431 vol. 1. 9, 14, 15, 44, 73, 150, 159, 238, 246, 344 v. 2
Bambo-achar, or pickle 66 vol. 2
Bamboing, what 247 vol. 2
Bambo, a meaſure ſo called 300 vol. 2
Bancouli or Bencouli 343, 366 vol. 2
Banda iſle, its nutmegs 118 vol. 2
———— cloves near it 448 vol. 1
Banditti maimed and active 304 vol. 2
Bang (ganga) intoxicating 291 vol. 2
North banks, what 24 vol. 1. 60-62-105 W. v. 3

Banks, fiſhing, of oyſters, &c. 20-24-31 vol. 1
——— ſand, high 123 vol. 1
——— about villages, where 212 vol. 2
Bantam deſcribed 346 vol. 2
Bao, or Boutan kingdom, where 232 vol. 2
Barbadoes, one of the Carribee iſles 7 vol. 1. 155, vol. 2. 10, 40, 53, 100 W. vol. 3
Barbecue, what and where 15, 81, 155, 257 vol. 1
Barbara, Sancta, harbour 180 vol. 1
Bark logs for fiſhing, &c. 267, 275, 288 vol 1 38 W. vol. 3
Bark for tanning 189 vol. 1
Barlaventa fleet, its progreſs 125, vol. 1. 284, v. 2
Barley at the Cape of Good Hope 374, vol. 2
Baſhee drink, what 95, 104, vol. 2
——— or the five iſlands 94, vol. 2
——— iſland, properly ſo called 95, vol. 2
Baſkets of palmeto 285, vol. 1
Baſtinadoing, what and where 44, vol. 2
Batavia, its trade, &c. 449, vol. 1. 116, 182, 232, vol. 2
Bathing in rivers, where uſed 9, 314, vol. 2
Bats, great, where found 452, vol. 1. 57, vol. 2
——— iſland of, deſcribed 56, 58, vol. 2
Batſha, its pilots, 181, 197, vol. 2
Bayidore C. its winds, 15 W. vol. 3
Bays, how cauſed 95-97, vol. 2
Beacons ſet on ſholes 121 vol. 2
Beads valued by Indians 119, 148, 159, vol. 1
Beards of tortoiſe ſhell, &c. 266, vol. 1. 79, 135, vol. 2
Bears, ant, deſcribed 62, 63, vol. 1
Beaſts, where none of prey 164, 451, vol. 1
——— venemous like a guano 452, vol. 1
Beaver hats, old, a commodity 119, vol. 1
Beef, how cut and ordered 82, vol. 1. 199 vol. 2
Bees, large and ſmall ſort 113, vol. 1

Beeves in the Weſt Indies 100 vol. 1
——— ſmelt off at ſea 34 W. vol. 3
Beef Iſland deſcribed 52-54, 89-93, vol. 1. 34, 67 W. vol. 3
Begging people 6-7, 35, 43, 106 vol. 2
Bells, where made 228, 268 vol. 2
—— muſical ſtruck upon 21 vol. 2
—— with claws worſhipt 84 vol. 2
Bellows, a particular ſort 20, 102 vol. 2
Benches, moveable, for rowing 150 vol. 2
Bencouli, ſee Bancouli
Bengal, bay, low ſhores 97-98 vol. 2
———— its winds 342 vol. 2. 20 W. vol. 3
———— commodities and beaſts 452 vol. 1 311, 336 vol. 2
———— channel by Achin 287 vol. 2
Bermudas iſlands and coaſts 163, 208, 285 vol. 1
Betle tree deſcribed 449 vol. 1. 193, 294 vol. 2
Bill birds deſcribed 71 vol. 1
Birds and fowls, where none 161, 415 vol. 1
———— many or few as there is grain 99 v. 2
———— at ſea a ſign of land near 415 vol. 1 373 vol. 2
Black ſmall birds 230 vol. 1
Black bird or chattering crow 68 vol. 1
Blanco C. of Africa 15 W. vol. 3
——— of Brazil 8, 103 W. vol. 3
——— of Mexico 245 vol. 1. 46 W. vol. 3
——— of Peru 272, 287 v. 1. 33,44,96,107 W. vol. 3
Blanco iſland deſcribed 192, 239 vol. 1
Blue mountains in Jamaica 11 vol. 1
Blewfield's River deſcribed 166, 219 vol 1
Blewfield's in Jamaica 42, 252 vol. 1. 46 W. vol. 3
Blood wood deſcribed 60, 249 vol. 1
Blooms or hot blaſts 371 vol. 2. 47 W. vol. 3
Bobwood deſcribed 169 vol. 1

Boccas, Rio dos, deſcribed 119 vol. 1
Bocca del Drago 167 vol. 1. 155 vol 2
Bocco Toro, its ſituation 167, 172, 239 vol. 1
Bonayry, or Buen Ayre 91, 182 vol. 1. 137 v. 2
Bonanos, a ſort of plantain 308, 316, 332, 442, 447 vol. 1
Bonetto, fiſh, where 452 vol. 1
Bonzies, heathen prieſts 71 vol. 2
Boobies, birds, where found 184, 188, 266, 280, 294 vol. 1
Borneo iſland deſcribed 48-98 vol. 2
Boua, or pageant king of Tonquin 216, 234, 236 vol. 2
Boutan kingdom, ſee boa
Bouton iſland and kingdom 124, 129, vol. 2
Bows and arrows, where uſed 239 v. 2 108 W. v 3
Brazil coaſts and winds 373 vol. 2. 9, 13, 18, 24, 80, 103 W. vol. 3
Bread where and what ſorts 147 vol. 1. 136 vol. 2
Bread fruit and tree deſcribed 429 vol. 1
Bremes, where 452 vol. 1
Brewer's ſtreights 276 vol. 2
Bricks dried in the ſun 273 vol. 1. 84, 213 vol. 2
Britain, New, coaſt 131 vol. 3
Brokers of Guzurat 300, 302 vol. 2
Brooms of palmeto leaves 285 vol. 1
Bubbles in the ſea 79 vol. 3
Buccaneers, or privateers 133, 385, 405, vol. 1
Buffadore rock and point 367 vol. 1
Buff jackets, a plantain pudding 445 vol. 1
Buffaloes, where 451 vol. 1. 37, 54, 79, 83 vol. 2
Buggaſſes, who 274 vol. 2
Bullawan, a name for gold 104, 356 vol. 2
Bumpkins, water veſſels 136 vol. 1
Burton wood deſcribed 26, 51, 59, 234 vol. 1
Burying alive, where and why 105 vol. 2
Buſh Key, One, deſcribed 20, 52, 93 vol. 1. 67 W. vol. 3

Buſh men, wild, where 108 W. vol. 3
Butter of buffaloes milk 312 vol. 2

C.

Cabbage tree and fruit 298, 449 vol. 1. 290 vol. 2
Cabinets, of what made 237 vol. 1
Cables made in Brazil 40 vol. 3
Cocoa tree and fruit 195, 286 vol. 1
Cachao city and province 183, 188, 225 vol. 2
Cacuſes (Caycos) what and where 106 W. vol. 3
Caihooca deſcribed 122, 370 vol. 1
Caimenes, what called ſo 78 vol. 1
Caimenes, iſlands great and little 12, 33 vol. 1
Callabaſhes, their uſes 116, 287, 426 vol. 1. 107 vol. 2. 86 W. vol. 3
Caldera Bay deſcribed 246, 252 vol, 1. 46, 83 W. vol. 3
California coaſt and fiſhery 405 vol. 1 97 vol. 2
Callabar, Old, its winds 9, 10, 14 W. vol. 3
Callaſuſung deſcribed 125, 128 vol. 2
Callavances, a fruit in Mayo 18 vol 3
Calms, preſages of ſtorms 86, 122 vol. 2. 61, 68, 72 W. vol. 3
Cambodia kingdom, trade, &c. 70, 75, 271 vol. 2
Cam-chain and Cam-quit oranges 192 vol. 2
Campeachy Bay and country 19, 43, 55 vol. 1 82 W. vol. 3
———— town and fort 15, 22, 44, 46 vol. 1
Camwood for dying 60, 212 vol. 1
Canales Iſland deſcribed 346 vol. 1
Canary Iſlands, their product 9 vol. 3
Canes Iſland 349 vol. 1
Canes how uſed and where 56, 197, 341 vol. 2
Canibals, whether any 155 vol. 2
Canoes what, where and how uſed 136, 169 vol. 1 150 vol. 2

Cantarras iſland 346 vol. 1
Canton city province and trade 79, 84 vol. 2
Canton, Pulo, its Cochinchineſe 176 vol. 2
Capalta, river of 368 vol. 1
Capes, their land and ſea breezes 28, 35, 38 W.
Cape of Good Hope 75 vol. 3
Cape, river, of C. Gracias Die 363 vol. 1
Capes, where of tallow 91, 210, 294 v. 2. 111 W.
Caraccos coaſt and trade 194, 138 vol. 1. 37 W.
Carribee, or Leeward Iſlands 15, 41 W.
——— Indians of the continent 7 vol. 1
Carpenter's River 162, 195 vol. 1
Carriers in America 119, 319 vol. 1
Carrion crows of three kinds 69-70 vol. 1
Carthagena, coaſt and trade 179 vol. 1. 97 vol. 2
——— breeze, why ſo called 44-46 W.
Carving among the Chineſe 81 vol. 2
Caſh, a coin of Tonquin 229, 300 vol. 2
Caſhew fruit deſcribed 47 vol. 3
Caſica (Cacique) chief of an I. village 58, 262 v. 2
Caſivina Point 256 vol. 1
Caſſavy root, its uſe 75 vol. 1
Catamarians, what and where 277 vol. 1
Cataracts where 263 vol. 1
Cats, and where eaten 256 vol. 1. 194 vol. 2
Catfiſh, where found 282, 395 vol. 1. 335 vol. 2
C. Catoch in Jucatan 12, 31 vol. 1. 32,82 W.
Cattle where, and killed by the winds 50 W.
Catty, a weight 297 vol. 2
Caput, Cavalli Hill 400 vol. 1
Cavallies, fiſh where 452 vol. 1. 293 vol. 2
Cedars, where and what 163, 409 vol. 1
Celebes Iſlands and coaſts 117-121 vol. 2
Centipee, a venomous reptile 66, 452 vol. 1
Centiquipaque (Santa Pecaque) 401 vol. 1
Ceylon iſland, its cinnamon 118 vol. 2
Chagre River, trades in it 160, 318 vol. 1
Chairs, where none uſed 8 vol. 2

Chambonzo, town and harbour 54 vol. 2
Chametly iſles near C. Corientes 390 vol. 1
——— near the tropic of cancer 395 vol. 1
Champa kingdom and trade 74, 173, 270 vol. 2
Champellodi la Mar, Pulo 177 vol. 2
——— de la Terra, pulo 177 vol. 2
Champeton river and town 49-50 vol. 1
Chandy point 281 vol. 1
Chattering crow of Brazil 51 vol. 1
Chau, tea ſo called 82, 200, 209 vol. 2
Chaubuck, a puniſhment 304 vol. 2
Cheapo town and river 156, 313, 336 vol. 1
Cheapo (Chiapa) in Mexico 109, 118, 363 vol. 1
Checapeque river 117 vol. 1
Cheeſe where made 249 vol. 1
Chepello iſland deſcribed 336 vol. 1
Chequetan 382 vol. 1
Children ſold by parents 206 vol. 2
Chick weed, where 26 vol. 1
Chili, its high land 227 vol. 1. 96 vol. 2
Chiloe iſle its timber 274 vol. 1
China, its S. borders 187, 232 vol. 2
China root where found 82 vol. 2
Chinam and Chinam box 222 vol. 2
Chinchamchee town 16 vol. 1
Chirapee bay 277 vol. 1
Chocolate how made 195, 383 vol. 1
Chocolatta north, what 43 vol. 1. 60 W.
Chop, or paſs requiſite at Tonquin 186 vol. 2
Choua, or governing king of Tonquin 234, 237 v. 2
Chriſtianity in Tonquin 261 vol. 2
Monte Chriſto diſcribed 269 vol. 1
Chuche iſland 344 vol. 1
Chuquebul town 53 vol. 1
Cinamon, whence 118 vol. 2
Circumciſion, where uſed 17 vol. 2
Citrons, where found 118 vol. 2
Clam, a ſort of oyſter 309 vol. 1

Clara, St. Iſland 28 vol. 1
Clocking hen of Brazil 52 vol. 3
Cloths neat and fine give reputation 39, 125 vol. 2
Cloth, long, cotton, plantain 446 vol. 1. 6 vol. 2
Clouds hover over land, &c. 415 vol.
Cloves, how grow and where 445, 447, 449 vol. 1
27, 118 vol. 2
Clove bark where 447 vol. 1. 27 vol. 2
Coals of wood to harden ſteel 52-59 vol. 1
Coaſts unequal in heights 95-96 vol. 2
Coaſts ſhort 92 vol. 2
Cochinchina, iſlands of it 69, 82, 179 234 vol. 2
Cochineal, what and where 258, 360, 362 vol. 1
Cockles, large where 288 v. 1. 120 v. 2. 136 v. 3
Cock white, a fee for a cure 92 vol. 1
Cock fighting uſed 348 vol. 2
Cockrecoes, birds 68, 71 vol. 1
Cocoa trees and nuts 210, 244, 321, 423 vol. 1.
55, 125, 149 vol. 2
——— in Brazil 46 vol. 3
Cocos iſlands 244, 265 vol. 1
Coco plumb buſh 51, 108 vol. 1
Cod pepper, or Guiney pepper 123, 428 vol. 1
Coire cables, how made 427 vol. 1. 132 vol. 2
Colan, its water and fiſhermen 275 vol. 1
Colanche River 167 vol. 1
Coldeſt winds, what 371-372 vol. 2
Colima town and valley 384 vol. 1
Colorado ſholes 32, 42 vol. 1
Comana 126, 198 vol. 1
Commodities how exchanged 377 vol. 1
C. Comorin, its winds 20 W.
Complexion of people 142, 165, 303, 429 vol. 1.
4, 69, 99, 208 vol. 2
Compoſtella in Mexico 402 vol. 1
Comrade at Mindanao 6, 36, 42 vol. 2
Conception River 60, 157 vol. 1

C. Conducedo 13-17, 44 vol. 1. 32, 43, 82 W.
Condore, Pulo, deſcribed 69-70 vol. 2
Congo River 150 vol. 1
Conies, where 109 W.
Cooleean river (Cullaean) 397 vol. 1
C. Coquibocoa 101 W.
Coquimbo where its timber 274 vol. 1
Coral bank, where 185 vol. 1
Cordage, what and where 357, 427 vol. 1
Cordial of ſnake and ſcorpions 221 vol. 2
C. Corientes in Mexico 378, 389 vol. 1
———— in Peru 307 vol. 1
———— of Cuba 12, 33 vol. 1
———— of Africa 19 W.
Cormorants, where 72-73 vol. 1
Corn, where 209, 233, 248, 386 vol. 1
Corn iſlands 165 vol. 1
Coromandel coaſts 97, 206 vol. 2
Coromada Mount, or Crown Iſland 389 vol. 1
Corpus Sant, what 87 vol. 2
Curraſoe, a bird 69, 118, 173 vol. 1
C. Corſo its rains, &c. 52-53 W.
Corunna (the Groyn) 200 vol. 2
Coſta Rica, its cocoa 195 vol. 1
Cotton ſhrub and cloth 298 v. 1. 60, 99, 210 v. 2
Cotton, ſilk, deſcribed 17 vol. 3
Cotton tree large 219, 298 vol. 1
Courts of judicature, name 247 vol. 2
Mountain cow, ſee ante
Cow, ſea, ſee manatee
Cozumel iſland 12, 32 vol. 1
Crabs, ſea, where 73 vol. 1. 196 vol. 2
—— land, where 35 vol. 1. 142, 196 vol. 2
Crabcatchers, birds 73 vol. 1. 195 vol. 2
Crawfiſh, where 196, 293 vol. 2
Crawls, what and where 36, 100, 301 vol. 1
Creeks, how cauſed 95-96 vol. 2

Creſſets what and where 16, 75, 305 vol. 2
Creoles, who ſo called 201 vol. 1
Cockadore, bird 129 vol. 2
Crocodiles, where 33, 77 vol. 1
Cruſia, a fowl 20 vol. 3
Cruz, la Vera, deſcribed 124, 125 vol. 1. 105W.
Cape de Cruz in Cuba 101 W.
Cruzes, Vinta de 318 vol. 1
Cuba Iſland 33-34, 301 vol. 1
—— S. Keys of 35, 41 vol. 1. 36 W.
Cudda (Queda) 163, 379 vol. 2
Cunnimere factory 351 vol. 2
Cups of cocoa nuts 426 vol. 1
Cure of amputation 305 vol. 2
Curlews, great and ſmall 72 vol. 1. 19 vol. 3
Curracao, or Queriſao iſland 180 vol. 1 40 W.
Currecoo, a bird 52 vol. 2
Currents, their kinds 100 to 107W.
Curtanas, what and where 75, 238, 248 vol. 2
Cuſtard apple deſcribed 25 vol. 3

D.

Dammer, a ſort of pitch 357 vol. 2
Dancing and ſinging 261, vol. 1.
Darien river 175 vol. 1
Davis's, capt. diſcovery 29 vol. 2
Davis's ſtreights, ſee N. W. paſſage
Day loſt in ſailing 52 vol. 2
Debtor, how uſed at Tonquin 246 vol. 2
Declination, caution about it 53 vol. 2
Decoys of hogs where 301 vol. 1
Deer, where 144, 173, 346, 451 vol. 1. 25, 46, 194, 345 vol 2
Degree of the equator 420 vol. 1
Degrees how taken 228 vol. 2
Dellagoa river 108, 112W.

Dendees, a ſort of palm berries 49 vol. 3
Deſarts iſles (Deſarcuſſes) 224 vol. 1
Devil, where feared 144 vol. 1
Dews at night and no rain 78W.
Monte Diabolo in Jamaica 11 vol. 1.
Diamond point 168, 286, 319, 341 vol. 2
Dice, of what made 225 vol. 1
Dildo buſhes, where 215, 234 vol. 1
Dilly river 321 vol. 2
Dinding, Pulo, Dutch fort 329, 335 vol. 2
Diſhes of cocoa nut ſhells 426 vol. 1
Ditches and drains 195, 208, 212 vol. 2
Dogs where 78, 256 vol. 1
Dogfiſh, where 15, 38 vol. 1
Domea river and bar 180, 190 vol. 2
Doves of ſeveral ſorts 293 vol. 2
Dough-boys. or dumplins 21, 243 vol. 1
Dragon tree and gum 134 vol. 2
Drake, Sir Francis 173, 265, 367, 412 vol. 1
Draughts or charts erroneous 327, 420, 422, 440 vol. 1
Drink, long abſtained from 414 vol. 1
Dropſies and the cure 388, 410 vol. 1
Drugs where and what 286 vol. 1. 229 vol. 2
Drums where uſed 116 vol. 1. 130, 140 vol. 2
Ducks tame, where 72, 452 vol. 1. 79, 194, 293, vol. 2
Dulce gulph 349 vol. 1. 83, 96W.
Durian tree and fruit 450 vol. 1. 290 vol. 2
Dutch Eaſt India Company 11, 116, 337, 346 v. 2
Dyes what and where 209, 229 vol 2

E.

Ear bored and ear-rings 166 vol. 1 100, 357 vol. 2
Earth yielding ſalt petre 14 vol. 1
Earthenware, where 383 vol. 1. 329 vol. 2

Eating, how 8, 112, 239 vol. 2
Ebb before a ſtorm 66, 70W.
Eels, where 293 vol. 2
Eggs of different kinds 36, 78, 149, 157, 189 v.1
Egg birds, where 27, 189 vol. 1
Eight, pieces of 377 vol. 1
Elephants, where and how uſed 191, 215, 236, 240, 308 vol. 2
Elephant mountain at Tonquin 181 187 vol. 2
Elephanta, a ſtorm 74-75W
Empaling, where uſed 305 vol. 2
Employments, what and where 69 vol. 2
Engliſh poſſeſſions in Weſt Indies 7-8, 100, 199, 361 vol. 1
———————— in Africa 212 vol. 1
———————— in E. Indies 146, 267, 352 vol. 2
Entertainments, how and where 114 vol. 1. 6, 38, 106 to 110, 220, 246 vol. 2
Equator, or equinoctial 233, 244 vol. 1. 201 v. 2 6 to 11W
Eſcondedo river and port 50 vol. 1
Eſtantions, or beef farms, ſee beeves
Eſtapa in the South Sea 382 vol. 1
Eſtapam, Campeachy 112 vol. 1
Eſtrees, count d' 181, 185 vol. 1. 46 W.
Ethics ſtudied at Tonquin 228 vol. 2
Eunuch where and why 248, 250 vol. 2

F.

Faces, their different forms 165, 179, 303, 430 vol. 1. 1, 79, 136, 209, 294 vol. 2
Factory, how to ſettle 29, 269 vol. 2
Falcon's, Conſtant, power at Siam 262, 274, 317 vol. 2
Famines, where and how 206, 295 vol. 2

Fanam of Coromandel 351 vol. 2
Fans of palmeto leaves 284 vol. 1
Feaſts, for what 106 to 110, 220 vol. 2
Feathers worn in caps 91 vol. 2. 111W.
Feet ſmall, why and where 166 vol. 1, 2
Fernandes, John, Iſle 221 to 226 vol. 1
Fernando de Noronho Iſle 56-57W.
Fetiſſeros, or Negro prieſts 250 vol. 2
Fevers, where 213, 287, 430 vol. 1. 13, 192 v. 2
Fighting, manner of 16, 242, 306 vol. 2
Fir tree, where and how uſed 229 vol. 2
Fire, how gotten 137 vol. 2
Fiſh and Fiſhermen 136, 243, 267, 275, 314 v. 1. 25, 36, 101, 136 vol. 2
Fiſher's I. by Tonquin 180 vol. 2
Fiſhing hawks, birds 73 vol. 1
Five iſlands, ſee Baſhee Iſlands
Flags, where uſed 126, 244 vol. 2
Flamingo, where found 204 to 206 vol. 1
Fleet, plate, from Lima 304 to 312, 341, 343, vol. 1
Fleſh, how eaten 199 vol. 2
Flies troubleſome 135 vol. 2
Flint heads to arrows 220 vol. 1
Floods, land, how when and where 151 to 155, 229, 329 vol. 1. 203, 206 vol. 2
Floors, how laid 285 vol. 1. 7, 84, 128 vol. 2
Florida gulph 60, 105W.
Fluxes where, and cure 287, 442 vol. 1. 13, 314 vol. 2
Flying fiſh where 213 vol. 1
Flying proes, where 296 vol. 2
Fogs and miſts, where and when 227, 287, 453 vol. 1. 40, 50W.
Fogo, I. of Cape Verd 211 vol. 2
Fokien province of China 90 vol. 2
Food what and where 143, 149, 174 vol. 1. 34, 136 vol. 2

Formoſa Iſle deſcribed 93 vol. 2
Formoſa Cape in Africa 50-51 W.
Fortifications and forts 180, 198, 253, 274, 312, 355, 432 vol. 1
Franciſco, Cape, St. 264, 295 vol. 1
French factory at Tonquin 94 vol. 2
Freſh water lagune in Campeachy 95 vol. 1
Friday, where the ſabbath 16, 53 vol. 2
Frock, what and where worn 115, 119 vol. 1
Frogs eaten, where 192, 196, 201, 223 vol. 2
Fruits wholeſome, how known 174 vol. 1
Funeral feaſts 220, 259 vol. 2

G.

Gabon River 54W.
Gage's ſurvey of Weſt Indies 94-95 W.
Gallipagos Iſlands 233 to 240 vol. 1. 57W.
Gallena Pintada, Guiney hen 19 vol. 3
Gallera Iſland 307-8 vol. 1
Gallicia, in Spain 96, 372 vol. 2
Gallingal, where 231 vol. 2
Gallio Iſland 137, 274, 295, 302 vol. 1
Galliwaſp, an inſect 66 vol. 1
Gallies and Gallyhouſes 243 vol. 2
Gaming, where uſed 210 vol. 2
Ganga, ſee bang
Garachina point 307, 327 vol. 1
Gardens, where and what 355, 428 vol. 1
Garlick, where and how uſed 294 vol. 2
Garrfiſh deſcribed 74 vol. 1
Garriſons at Toquin 240 vol. 2
Gartos, Rio de la, 14, 24 vol. 1
Geeſe, where 195, 393 vol. 2
Gentoos, who and where 350 vol. 2
George, Fort St. or Madras 341, 364, vol. 2. 37, 39, 41W.
George's, Prince, Iſland 409 vol. 1

Garret Dennis iſland 133 vol. 3
Giddineſs, how cauſed 450 vol. 1. 291 vol. 2
Gilded rings, where 119 vol. 1
Gilolo Iſland, its coaſts 98, 118 vol. 2
Ginger, where 231 vol. 2
Glaſs jewels and looking glaſſes 119, 158 vol. 1
Globe of the earth, its circuit 421-2 vol. 1
Goa, a Portugueſe ſettlement 425 v. 1. 326 v. 2. 74W.
Goats, where 183, 192, 204, 208 to 210, 218, 265 vol. 1. 61, 95 vol. 2
Goat Iſland of the Baſhees 95 vol. 2
Gold traded for 302, 303 v. 1. 129, 299, 316 v. 2
Gold Coaſt of Guiney 250 vol. 2. 52W.
Golden Iſland of the Samballas 316 vol. 1
Golden Mountain in Sumatra 286, 298 vol. 2
Gomez, Pulo, deſcribed 287, 307 vol. 2
Gong, what and where 17, 237, 243 vol. 2
Gongo, a puniſhing inſtrument 247 vol. 2
Good Hope, Cape of 247 vol. 2
Goodlud's captain, trading 439 vol. 1. 27 vol. 2
Gorgonia Iſland deſcribed 305 vol. 1. 85, 86W.
Government, forms of 2, 13, 210, 234, 307 vol. 2
Grafton Iſle, of the Baſhees 94, 109 vol. 2
Gramadael, an herb 245 vol. 1
Grande river, rapid 176 vol. 1
Grande de Darien, river 175 vol. 1
Grapes, where and what 347 vol. 2
Graſs, what and where 188, 221, 246, 265 v. 1. 25, 89 vol. 2
Gratia Dios, Cape 17, 82, 101 to 105W.
Greaſing the body 379 vol. 2
Greenhill's captain, letter 49, 53W.
Gripes, where frequent 287 vol. 1. 13 vol. 2
Grooper, or rock fiſh 225, 390 vol. 1
Groves, what and where 196, 291 vol. 1
Guam (Guahon) Iſle of the Ladrones 412 to 417 vol. 1. 11, 96W.

Guanchaquo port 229 vol. 1
Guano, what and where 192, 234, 309, 346 vol. 1
Guards of princes 14, 126, 236, 249 vol. 2
Guard ſhips, where and why 328, 337 vol. 2
Guardafuer Cape (Gaurdafuy) 20W.
Guaſco, whence its timber 276 vol. 1
Guaſlugualp (Guazocoalco) river 121-2 vol. 1
Guatimala city & volcano 359 to 364 v. 1. 107W.
Guatulco (Aguatulco) port 367, 370 vol. 1. 96W.
Guava, what and where 356, 391, 442 vol. 1
Guavre, Petit (French Tortuga) 56, 164, 327 v. 1 46W.
Guaxaca, its cochineal 363 vol. 1
Guiaquil, or Wyakill bay 281 to 286 vol. 1
Guiare (Porto de Guayra) 198, 318 vol. 1
Guiney coaſt 123, 353, vol. 2. 8, 14, 80 W.
Guiney, bite of 8, 16, 18, 51W.
Guiney corn, where 113 vol. 1.
Guiney, or cod pepper 123, 428 vol. 1
Guiney, New, diſcovered 124 vol. 3
Guiney worms, where 90 to 92 vol. 1
Gulls, ſea, where 56W.
Gum Dragon, ſee Dragon tree
Guns great and ſmall 7, 10, 236 vol. 2
Guts, eaten where 380 vol. 2
Guzurats, brokers at Achin 295, 300 to 302 v. 2

H.

Hacha, Rio de la 60, 177 vol. 1
Hair of the head 142, 165, 178, 303, 429 vol. 1
Half moon proes where 175 vol. 2
Hallover, in Campeachy 119 vol. 1
Halpo deſcribed 112 vol. 1
Hammocks of Indians, &c. 67, 116 vol. 1
Haniago ſhrimp trade 127 vol. 1
Harmatans, winds 49-50W.
Harpoons or fiſgiggs 15, 142 to 145, 171 vol. 1

Harveſt in the torrid zone 194, 206 vol. 2. 80 W.
Hats, what and where 115, 210, 284 vol. 1
Hatches, what and where 219 vol. 1. 137, 345, vol. 2
Havannah in Cuba 126, 319, 444 vol. 1
Hautboys uſed in churches 116 vol. 1
Heads, people of little 1 vol. 2
Hean town and trade 185 to 191, 217, 260 vol. 2
Heat, what and where 201, 314 vol. 2
Hedges, what and where 428 vol. 1. 212 vol. 2
Hellena, Santa, iſland 392 vol. 2
———— point and village 266, 294 vol. 1
Hemp, where 353, 357 vol. 1
Herbs, what and where 226 vol. 1. 182, 191 v. 2
Herons, where 72 vol. 1. 195 vol. 2
Hides, how dreſt 99, 111, 248 vol. 1
Hilanoos, Mindanayans 1, 16 vol. 2
Hills, ragged 383 vol. 1
Hina hill deſcribed 46 vol. 1
Hippopotamus, river or ſeahorſe 105 vol. 1.
Hiſpaniola 9, 327, vol. 1. 44, 60, 101 vol. 2
Hives for bees, what and where 113 vol. 1
Hockſing of beeves 98-99 vol. 1
Hoc-ſhu, its jars, &c. 92, 302 vol. 2
Hoes, where uſed 119 vol. 1
Hogs, what and where 33 to 40, 99, 210, 274, 451 vol. 1. 22, 55 vol. 2
Hog Iſland deſcribed 245 vol. 2
Hog plumb tree deſcribed 257 vol. 1
Holland. New, deſcribed 421 vol. 1. 134 vol. 2. 81 to 106 vol. 3
Honduras bay 97 vol. 2
Honey, where 113, 212 vol. 1. 48 vol. 2
Hooks and lines, fiſhing 15, 34 vol. 1. 197 vol. 2
Hoops, or wriſtbands worn 43, 357 vol. 2
Hope, Cape of Good 372 to 383 vol. 2
Horizon, clouds there 415 vol. 1

Horns of ſpiders, how uſed 66 vol. 1
Horſes, where 103, 183, 386 vol. 1. 16, 194 v. 2
Horſe hoof, a ſhell fiſh 46 vol. 1
Hoſpital, where 355 vol. 1
Hottentots, or Hodmodods 378 to 383 vol. 2
Houſes, what and where 273, 432 vol. 1. 8, 42, 61 vol. 2
Hudſon's bay 406 vol. 1
Humming bird deſcribed 68 vol. 1
Hunting where and how 36, 82 vol. 1. 42, 195 vol. 2
Hurricanes, what and where 60, 68, 70W.
Huſbandmen and huſbandry 402 vol. 1. 83 vol. 2

I. J.

Jaca (Jack) tree and fruit 451 v. 1. 290, 345 v. 2
Jackals, where 371 vol. 1
Jackets what and where 115 vol. 1. 99, 211 vol. 2
Jacks, ſubtile, birds 70 vol. 1
Jago, St. iſland of Cape Verd 210 vol. 1. 24 vol. 3
——— river of Mexico 400, 403 vol. 1
——— river in Peru 296 vol. 1
Jamaica, coaſts, &c. 9 vol. 1. 31,83, 101W.
Jamby, its pepper 346 vol. 2
Japan its trade 82, 197, 232, 292 vol. 2
Java iſland 98, 290 vol. 2
Idols, where and what 71, 75, 84, 224, 316 vol. 2
Jenetæ bird deſcribed 53 vol. 2
Jenipah or Jenipapah fruit 47 vol. 3
Jeoly, the painted prince 27, 354 to 359 396 v. 2
Jew fiſh, where 382, 392, 410 vol. 1
Jihore (Jhor) river and kingdom 175 vol. 2
Incenſe, where uſed 226 vol. 2
Indies and Indians 356, 278, 428 vol. 1. 106, 126 vol. 2
India, Eaſt, coaſts 97 vol. 2
——————— ocean 421 vol. 1. 326 vol. 2

——— Weſt cuſtoms, &c. 142 to 198 vol. 1
Indian corn, ſee maize
Indico, where made 360 vol. 1
Indrapore in Sumatra 346, 355 vol. 2
Indraught land, what 421 vol. 1
Ingwa fruit deſcribed 49 vol. 3
Inſect, poiſonous one 452 vol. 1
Inſtrument caſes 75 vol. 1
John's, St. Iſland near China 78 to 85 vol. 2
——— of the Philippines 437 vol. 1. 61, 113 vol. 2
Johnſon, captain, murdered, 276 vol. 2
Jonks of Aynam 179 vol. 2
Iron, how wrought 11, 102 vol. 2
Iſlands, rangs of them 308 to 311, 321, 332, 449. vol. 1
Iſpahan, merchants there 48W.
Iſthmus of Darien 146 to 158 vol. 1
Jucatan (Yucatan) 12 to 19 vol. 1
Julian, Port, St. 310 vol. 1
Juſtice how adminiſtered 105, 246 vol. 2

K.

Keys or iſlands 34 vol. 1
Keyhocca (Caihocca) 122 vol. 1
Kings Iſlands 304 vol. 1
Kittimpungo, what 106 vol. 1
Knives, a commodity 43, 119, 148, 158 vol. 1

L.

Lack (Laque) what and where 191, 193, 229 v. 2
Ladders, how and where uſed 285 vol. 1. 101 v. 2
Ladles of cocoa nut ſhells 426 vol. 1
Ladrone Iſles, ſituation 429, 432 vol. 1
Laguna in Teneriff 6 vol. 3
Lagunes, or ſalt water lakes 373, 395 vol. 1
Lamps where burning 70, 85 vol. 2
Lancerotta, Iſland of the Canaries 4 vol. 3

Lances, where uſed 251 vol. 1. 16, 75, 137 vol. 2
Land, how know to be nigh 415 vol. 1
Languages, what and where 9, 104 vol. 2
Laos, kingdom of 187 vol. 2
Laſcars, E. India ſeamen 279 vol. 2
Latitudes by obſervation 216, 217, 244, 415 v. 1
Lavelia deſcribed 308, 345 vol. 1
Laut, Raja, where 15 vol. 2
Lead, where ſold 38, 108 vol. 2
Learning, what and where 9, 227 vol. 2
Leeward Iſlands, why called 15W.
Legs how ſwathed, and why 166 vol. 1
Legamy, Leganea, in Jamaica 36, 83W
Lempa, river, where 359 vol. 1
Leon, Realeja, port 347, 349 vol. 1
Leaproſy, where and what 430 vol. 1. 13. 185 v.2
Libby tree and its ſago 421 vol. 1
Lice, who ſubject to them 379 vol. 2
Lichea tree and fruit 193 vol. 2
Lightning frightful 264, 359 vol. 1 86, 130 v. 2
Lignum aloes and aguala wood 178 vol. 2
Lima, its trade, fleet, &c. 268, 276 vol. 1
Limbs, people of good 142, 303, 429 vol. 1
Lime or plaiſter on walls 274 vol. 1
Lime tree and fruit 96, 391, 423 v. 1 192, 290 v.2
Limpets, what and where 200, 309 vol. 1 71 v. 2
Linchanche town and lookout 16 vol. 1
Lions, where 109W.
Lions, ſea, what and where 225 vol. 1. 394 vol. 2
Lion lizard deſcribed 52 vol. 1
Lips, full, thick, thin, &c. 165, 450 v. 1. 294 v.2
Liver, how affected by poiſon 72 vol. 2
Lizard, where 52, 451 vol. 1. 67 vol. 2
Loango coaſt and city 55 to 57, 107W.
Lobos Iſle de la Mar 229, 279 vol. 1
——— Iſle de la Ter 229, 279 vol. 1
Locuſts, what and where 103, 195 vol. 2

Log forwarded or retarded 422 vol. 1
Logwood, how and where grows 49, 53, 58, 80 vol. 1
Loggerhead Key in Campeachy 12 vol. 1
Long, captain, ſhipwrecked 31 vol. 1
Longitudes computed 389, 416 vol. 1. 54 vol. 2
Lookouts, or watch boxes 16, 161, 199, 283 v. 1
Lopez, de Gonſalvo, Cape 16, 51, 80W.
Lopez, Martin, Port of 260 vol. 1
Lorenzo (Lawrence) C. 228, 327 v. 1. 33, 107W.
Lucas, Cape, St. in California 278, 405 vol. 1
Lucia, Iſle, Sancta 7 vol. 1
Luconia Iſland 438 vol. 1. 60 vol. 2

M.

Macao in China 91, 273 vol. 2
Macaſſer in Celebes 118 vol. 2
Maccaw tree and berry 110, 175 vol. 1
——— bird where 293 vol. 2
Mackerel, Spaniſh, where 75 vol. 1
Makeraw bird deſcribed 69 vol. 1. 51 vol. 3
Madagaſcar Iſle (St. Lawrence) 235 vol. 1. 353 v. 2
Magellan, where killed 438 vol. 1
——— ſtraights of 214 vol. 1
Maggots in fruits 257 vol. 1
Maguella valley deſcribed 354 vol. 1
Maho tree and bark 172 vol. 1. 110W
Mahometaniſm, where 16, 125, 175 vol. 2
Mairs, le, Straights 215 vol. 1
Maize, or Indian corn 183, 195, 256, 285 v. 1
Malabar coaſt 206, 218, 345 vol. 2
Malabrigo 336 vol. 1
Malacca ſtraights 68 vol. 2
——— coaſt and promontory 175, 176, 323 v. 2
——— town and harbour 175, 323 vol. 2
Malayan language, where uſed 9, 68 vol. 2
——— veſſels, arms, &c. 75, 340 vol. 2

Malmſey wine, where 8 vol. 3
Mammee tree and fruit 234, 243, 321 vol. 1
Mammee, wild 337 vol. 1
Mammee ſapota, where 338 vol. 1
Man of war bird, where 26 to 29, 184 vol. 1
Man of war lagune in Campeachy 93 to 95 vol. 1
Manatee, ſea cow, where 76, 110, 167 vol. 1
Manchineel tree and fruit 35, 174 vol. 1
Mandarins of Tonquin 186, 198, 210, 218 vol. 2
Mangera town and iſland 256 vol. 1
Mangaſtan tree and fruit 290, 345 vol. 2
Mango tree and fruit 65 vol. 2
Mango volucre bird 373 vol. 2
Mangrove trees, their kinds 13 to 18, 189 vol. 1
Manilla town and harbour 377 vol. 1
Manners of people, ſee the countries, &c.
Manta deſcribed 268 vol. 1
Maracaybo gulph 126, 319 vol. 1
Marble rocks, where 187 vol. 2
Margarita Iſland 306, 319 vol. 1
Marias Iſles 408 vol. 1
Maria iſle of the Ladrones 423 vol. 1
Maria, Sancta, river and town 293 vol. 1
Mary's V. image of 176, 232 vol. 1
Marmalade, where 232, 306 vol. 1
Marquis, Port, deſcribed 379 vol. 1
Marriages 115 vol. 1. 13 vol. 2
Martha, Sancta, high land 177 vol. 1. 97 vol. 2
Martin's, St. high land of 19, 44, 122 vol. 1. 34, 43 W.
Maſcarin's, Don, I. or Engliſh foreſt 235 vol. 1
Maſking, where uſed 116, 261 vol. 1
Maſſaclan deſcribed 398 vol. 1
Maſts of ſhips 68, 85 vol. 2
Mathematicks, where learnt 228 vol. 2
Matique gulph 359 vol. 1
Maws of goats eaten 102 vol. 2

Mazentelbo rock 401 vol. 1
Mayo, iſland of C. Verd 209 vol. 1. 12 to 25 v. 3
Meangis Iſles 24, 27 vol. 2
Mechanics, where 209, 228 vol. 2
Melinde Bay 20W.
Melons, where 356, 434, 442 vol. 1. 192 vol. 2
Melory tree and fruit 16, 149 vol. 2
Mendibee fruit 50 vol. 3
Merchants at Tonquin 448 vol. 1. 301 vol. 2
Merga in Siam 316 vol. 2
Mericaſah fruit 48 vol. 3
Merida in Jucatan 17, 114 vol. 1
Miſſiſippi river 34W.
Meſs, a gold coin 297 vol. 2
Mexico kingdom, coaſts of 374, 411 vol. 1
Mexico, New 57, 360, 405 vol. 1
——— bay and coaſts 377 vol. 1
——— cities and ports 319, 377, 388 vol. 1
Mice, where 66 vol. 1
Michael's St. gulph 140, 327 vol. 1
Milk, ſour (tire) for fluxes 314 vol. 2
Mindanao coaſts, towns, &c. 440 vol. 1
Mindora iſlands and ſtreights 59 vol. 2
Miniola, a fowl 20 vol. 3
Miſhlaw of plantains, what 445 vol. 1
Miſſionaries and miſſions 147, 260 vol. 2
Miſts & fogs, where & none 227 vol. 1. 50-78W.
Mogul, Engliſh ſerve him 312, 350 vol. 2
Mole to keep out floods 217 vol. 2
Molimbo Cabendo, &c. 55W.
Moloſſos, where 320 vol. 1
Monaſtry, Spaniſh, where 176, 258 vol. 1
Monkeys eaten, and where found 61, 149, 156, 173 vol. 1
Monk fiſh, where 98 vol. 3
Monmouth Iſland 94 108 vol. 2
*M*oon influences tides 90, 97, 98W.

*M*oors, who in E. India 312, 323, 327, 350 v. 2
*M*oro de Porcos 345 vol. 1
*M*orooned, where and when uſed 84 vol. 1
*M*oſe, Villa de, taken 110 vol. 1
*M*oſkito (*M*oſquito) Indians 142, &c. vol. 1
*M*oſkitos, or gnats, where 81, 120, vol. 1. 34 v. 2
*M*oſques, what and where 17, 295 vol. 2
*M*oſs turtle feeding 236 vol. 1
*M*ountains, their effect 78, 83-4, &c. W.
Blue mountain in Jamaica 11 vol. 1
*M*ount, The, in Jucatan 13, 14 vol. 1
*M*ount C. or Miſerada in Guiney 14, 15, 51 W.
*M*ountain cow, ſee ante
*M*ountſerat iſland 70 W.
*M*ozambique trade 308 vol. 1
*M*uckiſhaw fruit 49 vol. 3
*M*ud fiſh, where 293 vol. 2
*M*ugar Key, or Woman's Iſle 12 vol. 1
*M*ulattos and Maſteſos, who 122, 320, 382 vol. 1
*M*ulberry tree, where 192 vol. 2
Mules, where 122, 382, 411 vol. 1
Mullets, where 74 vol. 1. 293 vol. 2
Mungaroo fruit 49 vol. 3
Munjack, Pitch, where 129 vol. 1
Muſcles, where 288, 305 vol. 1
Muſic, where uſed 261 vol. 1
Muſk, where and whence 77 vol. 1. 229, 232 v. 2
Muſlins, where 271, 377 vol. 1
Muſteran de Ova fruit 49 vol. 3

N.

Nails, why kept long 2 vol. 2
Narborough, Sir J. miſinformed 378 vol. 1
Naſſau Iſland 144 vol. 2
Nata deſcribed 309, 345 vol. 1
Natal river deſcribed 384 vol. 2
Natural philoſophy learnt, where 228 vol. 2

Needles, where wanted 119 vol. 1
Negroes, what and where 308, 329, 334 vol. 1
Nellegree Hills in Bengal 311 vol. 2
Nets for fiſhing 15 vol. 1. 69, 197 vol. 2
Nevis iſland 70W.
New England Indians 131 vol. 1
Newfoundland 130, 330 vol. 1
Ngean, province of Tonquin 190, 239 vol. 2
Nicaragua trade and wood 248 vol. 1
Nicobar Iſlands 146 vol. 2
Nicobar Iſle, properly ſo called 147 vol. 2
Negril Point in Jamaica 41 vol. 1
Noddy, a bird 188 vol. 1
Nombre de Dios 193 vol. 1
Noronho's, Fernando de, Iſle 58W.
Norths, ſtorms, and north banks 24, 43 vol. 1. 60, 71, 105W.
N. W. and N. E. paſſages 406 vol. 1
Nuke mum, a pickle 197 vol. 2
Nurſe fiſh, where 28, 38 vol. 1
Numegs, where 448 v. 1. 66, 118, 317, 356 v. 2
Nuttee, Pulo 174 vol. 2

O.

Oakum for caulking ſhips 427 vol. 1
Oaks, where in torrid zone 55 vol. 1
Oarrha deſcribed 388 vol. 1
Oars, where and how uſed 189, 252 vol. 1. 102, 175, 184 vol. 2
Oath of allegeance 250 vol. 2
Obſervations of the ſun 216, 414 vol. 1
Offerings to idols 84 vol. 2
Oil, where and how made 276, 331, 426 vol. 1
Oleta river 400 vol. 1
Omba Iſles and ſholes 130 vol. 2
One Buſh Key, ſee Buſh
Onions, where 191, 292 vol. 2

Opium, where uſed 331 vol. 2
Opoſſum, beaſts where 61, 97 vol. 1
Oranges, what and where 391, 423, 442 vol. 1.
Orange Iſland 94, 101 vol. 2.
Oratavia in Teneriff 4 vol. 3
Ornaments of dancing women 19 vol. 2
Oro Pulo 176 vol. 2
Oromkeys of Achin 168, 306 vol. 2
Oſtridges, where 135, 375 vol. 2
Otee fruit vol. 3
Otoque Iſland 334 vol. 1
Otta, ſee Anatta
Ovens, made where 409 vol. 1. 213 vol. 2
Outcry of fiſh at Malacca 327 vol. 2
Outlagers of boats 431 vol. 1. 150, 157, 160 v. 2
Oyſters, what and where 178, 288, 306 vol. 1. 25, 328 vol. 2

P.

Pacheca Iſland 308, 330, 340 vol. 1
Pacific ocean, what 227 vol. 1. 78, 83W.
Paddles how and where uſed 431 vol. 1. 38W.
Padres, ſee prieſts, Spaniſh
Pagally, what and where 4, 36, 42 vol. 2
Pagodas, idol temples 224, 257, 316 vol. 2
——— coin, how much 352 vol. 2
Paita, or Payta town 273 vol. 1
Painters and painting 82, 228, 301, 360 vol. 2
Palaces deſcribed 215, 295 vol. 2
Palankin of *M*indanao 20 vol. 2
Palimbam in Sumatra 75 vol. 2
Pallacat in Coromandel 364 vol. 2
Palm trees, where 380, vol. 1. 214 vol. 2
Palm wine 212, 380 vol. 1
Palm oil, where uſed 379 vol. 2
Palma *Ma*riæ, where 346 vol. 1
Palmeto, where uſed 284, 432 v. 1. 5, 14, 85 v. 2

Palmas Cape coaſt and wind 16, 38, 50, 80W.
———— river 119 vol. 1
Palo de Campeche 48 vol. 1
Panama Bay 310 to 320 vol. 1
——— city 311 vol. 1
Panay, a Spaniſh iſland 58 vol. 2
Pangaſanam (Pongaſſinay) of Luconia 59 vol. 2
———— in Sumatra 346 vol. 2
Panuk river and city 126 vol. 1
Papah, a fruit 26 vol. 3
Paper, what and where 70, 226 vol. 2
Parakites where 68, 453 vol. 1. 67, 195 vol. 2
Parſelore Pulo, deſcribed 323 vol. 2
Paracota, or Barracuda fiſh 74 vol. 1
Parrots, what and where 68, 128 vol. 1. 345 v. 2
Partridges, where 195 vol. 2
Paſſao cape 295 vol. 1. 33, 107W.
Paſſage into the South Sea 94 vol. 3
Paſſange Jonca 167 vol. 2
Paſtal river, ſee Coolecan
Paſtures, where 353, 365 vol. 1. 184, 190 vol. 2
Patagonia 220 vol. 1
Pate bay, calms 20 W.
Pattache, a Spaniſh galleons 318 vol. 1
Pavillions to ſleep in 43 81 vol. 1
Paving of ſtreets 215 vol. 2
Paul's St. Iſland 308, 340 vol. 1
Peaſe, where growing 374 vol. 2
Peacock, a bird like it 109W.
Pears, where growing 374 vol. 2
Pearl oyſters and fiſhery 178, 306, 397 vol. 1
Pearl iſlands near Tonquin 181 vol. 2
———— in the W. Indies 164 vol. 1
———— or King's iſle near Panama 308 vol. 1
Pecaque, ſee Centiquapaque
Peccaree, where 61, 97, 144 vol. 1
Pecul, how much 297 vol. 2

Pedro point, in Jamaica 32, 101W.
Pegu, its achar, &c. 65 vol. 2
Pelicans, where 72, 73 vol. 1. 195 vol. 2
Penguin, birds where 230, 279 vol. 1
——— fruit, where 96, 396 vol. 1
Pentare Iſland 130 vol. 2
Pepper, where and trade 178, 233, 277 to 282 v. 2
Periagos, ſee canoe
Perica iſland 320 vol. 1
Periwincles, ſhell fiſh 305 vol. 1
Pernambuc, healthy 31 vol. 3
Perſia, winds 20, 48W.
Peru coaſt, ſoil, &c. 227, 273 vol. 1
Petaplan hill 381 vol. 1
Petango fruit 49 vol. 3
Peter, St. and St. paul, river 95, 102 vol. 1
Petrel, a bird, where 66 vol. 3
Petticoat, where uſed 115, 148 vol. 1. 3, 148 v. 2
Petties, Bantam coin 297 vol. 2
Petumbo fruit 49 vol. 3
Peuns, who and where 350 vol. 2
Philippine Iſlands 437 vol. 1
Phrenſy, laughing, how cauſed 291 vol. 2
Phyſic nuts, where 50 vol. 3
Pickers for teeth and tobacco 66 vol. 1
Pictures in houſes 116, 274 vol. 1
Pies Pond, in Beef Iſland 79 vol. 1
Pigeons, where 68, 173, 310, 409 vol. 1. 261 v. 2
Pillory, what and where 250 vol. 2
Pine tree, where 332 vol. 1
Pinas port 332 vol. 1
Pines, Iſle of, by Cuba 33 to 40 vol. 1
Pineon, a fruit 50 vol. 3
Pine apple fruit 144, 423 vol. 1. 92, 290 vol. 2
Pine drink, what 145 vol. 1
Pine, wild, ſhrub 58 vol. 1
Pintado bird, where 65 vol. 3

Pipes, muſical, where 116 vol. 1
Pirates, Chineſe, &c. 272, 329 vol. 2
Piſcadore iſlands 89 to 92 vol. 2
Piſco, its wine 331 vol. 1
Pitch, what and where 357 vol. 1 68 vol. 2
Piura deſcribed 277 vol. 1
Planks not ſawn but ſplit 11 vol. 2
Plantains, where 113, 442 to 447 vol. 1
Plants of New Holland 105 vol. 3
Plata iſland 265 vol. 1
Plate of *M*exico 125 vol. 1
Plow and plowing, how and where 83 vol. 2
Poles for ſeveral uſes 195, 198, 214 vol. 2
Polar winds 372, 391 vol. 2
Poligamy, where allowed 13, 125, 218 vol. 2
Pomgranates, where 290, 374 vol. 2
Pone tree, its uſe 193, 230 vol. 2
Pondicherry fort 364 vol. 2
Pontique point 391, 394 vol. 1
Popogaios, *M*exican breezes 46W.
Porcelain, of what and where made 81 vol. 2
Porcos, *M*oro de, 345 vol. 1
Porcupines, where 61 vol. 1. 292 vol. 2
Pork, how eaten 199, 258 vol. 2
Porpuſſes and their oil 176 vol. 2. 71W.
Portobello coaſt and trade 160, 317 vol. 1. 97 v. 2
Porto Rico Iſland 100, 361 vol. 1
Port Royal in Campeachy 50, 52, 238 vol. 1
——— in Jamaica 238 vol. 1. 36, 65, 107W.
Portugueſe diſcoveries 325, 372 vol. 2
Poſole (Poor Soul) Indian drink 114 vol. 1
Poſſum, ſee Opoſſum
Potatoes, where 144, 147, 180, 285 vol. 1
Potoſi, its ſilver mines 402 vol. 1
Powder (gun) where and how made 238, 264 v. 2
Pracel Sholes 63, 176 vol. 2
Prata Iſland and rocks 78 vol. 2

Prawn, where 196 vol. 2
Prayers, how and where made 16, 22, 225 vol. 2
Precipices, towns built on 101 vol. 2
Preſents expected 4, 31, 91, 128, 274 vol. 2
Prieſts, Spaniſh Padres 178, 258, to 261, 432 v. 1
Princes eaſtern their ſtate 7, 14, 19, 308 vol. 2
Proceſſion at a circumciſion 20 vol 2
Proes what and where 14, 119, 175, 296 v. 2
Propheſy in America 313 vol. 1
Proſtitution of women 69 vol. 2
Providence iſland 60, 167 vol. 1
Puebla Nova taken 347 vol. 1
Pulo its ſignification 64 vol. 2
Pulo Arii deſcribed 323, vol. 2
Pumice ſtones where 364 vol. 1
Pumpions where 442 vol. 1 99, 192 vol. 2
Pumps, Spaniſh for ſhips 114 vol. 2
Pumple noſe fruit 290 vol. 2
Puna iſland and town 283, 310 vol 1
Puniſhments what and where 33 44 105 246 v. 2
Punta Arena 283 vol. 1
Purfication city 390 vol. 1
Purſlain wild where 191 vol 2

Q.

Qualifications of people 169 to 173, 212, 430 vol. 1
375 v. 2
Qualities of people ſee countries
Quam a bird where 69, 154 vol. 1
Quantung (canton) in China 29 vol. 2
Queen of Achin her election 308 vol. 2
Queda, Cudda, oil uſed 337, 342 v. 2
Queſne's, Du, voyage 364 vol. 2
Quibo (cobaya) iſland, &c. 346 vol. 1
Quicara iſland 346 vol. 1
Quickſilver where 377 vol. 1

Quinam metropolis of Cochinchina 177 vol 2
Quinces where 374 vol. 2
Quito city and trade 286 vol. 1

R.

Rabek a fowl 20 vol 3
Racoon or Indian coney 35 305 409 v. 1, 85 v. 3
Rack see arack
Rafts see bark logs
Rags where saleable 159 vol 2
Rajas, Indian Princes 347 vol. 2
Rains, when and where 151 to 155 213 320 341 430 vol 1, 19 52 55 W.
Ramdam, Mahometan Lent 22 36 38 vol. 2
Raucheria Peal fishery 178 vol. 1
Ranchera island 346 vol. 1
Rashbouts, who and where 350 vol 2
Rattan canes where 164 214 vol. 2
Rattan cables 332 vol. 2
Rats, where many 26 47 412 vol. 1
Raw fish and flesh eaten 102 199 vol. 2
Realeja, Ria Lexa 252 350 vol. 1
Recreations 221 vol. 2
Red Sea 208 vol. 1, 111 352 vol. 2
Redwood see blood, cam and log woods
Reed, hats made of them 211 vol. 2
Refugees, French 374 vol. 2
Religeous creeds prayers, &c. 16 224 vol. 2
Remora, sucking fish 199 vol. 1
Renegados where 303 vol. 2
Revolution at Siam 316 vol. 2
Rhubarb where 231 vol. 2
Ria Lexa see Realeja
Rice where growing 212 308 423 436 vol. 1, 8 30 60 72 190 vol. 2, grows in wet soil 429 vol. 1, 79 83 194 vol 2, hurt by much rain 206 vol. 2, harvest how ordered 194 vol. 2, trod out

out by buffalos 83 vol. 2, Subſiſtance of Eaſt Indians 74 99 191 218 vol. 2
Ringroſe Mr. killed 404 vol. 1
Rings where worn 119 vol. 1, 43 357 vol. 2
Ripling or cocking ſea 266 vol. 1, 57 W.
Rivers not perennial where 228 vol. 1, 204 vol. 2 overflow in the wet ſeaſons 203 vol. 2, brackiſh in dry ſeaſons 391 vol. 1, cauſe ripling ſeas 57 91 W.
Roads and riding for ſhips 109 182 190 198 230 259 vol. 1
Rock iſlands 187 vol. 1
Rockets, ſky, where fired 21 vol. 2
Rocky coaſts have deep ſeas 95 vol. 2, abound in fiſh 225 vol. 1
Rock fiſh (grooper or bacalao) 225 390 vol. 1
Rokbo river in Tonquin 179 185 vol. 2
Roman cape 101-2-4 W.
Rondo, Pulo, deſcribed 288 vol. 2
Roofs of buildings 47 116 273 353 vol. 1, 61 149 211 225 vol. 2
Roots eatable where 191 199 346 vol. 2
Roſario river and town 399 vol. 1
Roſemary iſle in N. Holland 96 vol. 3
Rowing to beat of time how 243 vol. 2
Rudder what uſed for 431 vol. 1, 175 vol. 2
Rum where in demand 21 93 vol. 1
Ruſhes burnt on altars 211 226 vol. 2
Ruſk a ſort of biſket 436 vol. 1

S.

Sabath the Mahomatan 16 53 vol. 2
Sacrificio I. in the ſouth ſea 370 vol. 1, in the Gulph of Mexico 124 vol. 1
Sacrifices to Idols 70 211 226 vol. 2
Saggen what and where 4 vol. 2

Sago where and how made 441 vol. 1 8 314 vol. 2
Sails and ſail cloth 48 426 vol 1. 60 85 183 vol. 2
Sailing in Eaſt India 22 to 24 33 W.
Saints painted how 116 257 vol. 1
Saker great guns 233 vol. 2
Sale or auction how 327 vol. 2
Sal I. of Cape Verds 204, vol. 1
Sal, Rio de, deſcribed 397 vol. 1
Salma harbour and ſalt 44 vol. 1
Sallagua town and harbour 378 386 vol. 1
Salmas or ſalt ponds where 183 191 204 209 244 371 398 vol. 1
Salt making and kerning 44 191 vol. 1
Salt Lakes where 373 vol. 1
Salt water under freſh 177 vol. 1, 321 vol. 2
Salt, wells dug in ſand 52 118 vol. 1
Salt creck in Campeachy 100 vol. 1
Salt Petre imported and uſed 233 265 vol. 2
Salt earth where 10 vol. 1
Samballas iſles and point 157 to 160 173 vol. 1
Sambilong, Pulo, 334 vol. 2
Sambo river deſcribed 328 332 vol. 1
Sam-ſhu a ſort of arack 92 vol. 2
Sands hot a cure 410 vol. 1, a puniſhment 34 vol. 2, raiſed by winds 15 47 W.
Santa Cruz in Teneriffe 4 vol. 3
Santa Pecaque ſee Centiquipaque
Sapadillo fruit where 50 173 337 vol. 1
Sarſaparilla where grows 286 vol. 1
Saſh where worn 148 vol. 2
Savages miſrepreſented 154 vol. 2
Savannahs what and where 50 53 221 vol. 1
Sauces of pepper 66 vol. 2
Sauſages how made 199 vol. 2
Sawyers and ſaws 43 vol. 1, 11 38 vol. 2
Scabby lips how cauſed 199 vol. 1
Scales not uſed where 107 vol. 2

Scarf what and where worn 127 294 vol. 2
Scholars and ſchools 9 227 vol. 2
Succhadero deſcribed 330 vol. 1
Sciſſars where wanted 119 158 vol. 1
Scorpions where 66 452 vol. 1
Scuda iſland 173 vol. 1
Scurvy cured 226 vol. 1, 395 vol. 2
Sea high, great, rough, &c. 123 190 267 333 365 vol. 1, 390 vol. 2
Seamen where good 175 vol. 2
Seamen ignorance of 409 v. 1 394 v. 2 15 31 W. loſt by careleſsneſs 41 W.
Sea devils fiſh where 76 vol 1
Sea cow ſee manatee
Sea or river horſe ſee Hippopotamus
Sea lion ſee lion
Sea dogs ſee ſeals
Seals what and where 223 279 vol. 1
Seaſons of the year how 314 vol. 2. 76 88 W.
Sebo I and one near it 55 vol. 2
Segovia in Mexico 263 vol. 1
Serle Capt. and Serle's Key 54 vol. 1
Selam Look-out 16 vol. 1
Serpents ſee ſnakes
Settlements how and where made 292 vol. 1 26 68 267 vol. 2
Shabander what 170 306 to 309 328 vol. 2
Shackles and wriſtbands 357 vol. 2
Shallow places 167 259 302 vol. 1
Shape of people what 116 142 303 429 vol. 1. 69 79 125 135 vol. 2
Sharks where 213 243 vol. 1, 142 vol. 2, 87 vol. 3
Sharks bay in New Holland 86 vol. 3
Shear water bird 63 vol. 3
Sheathing of ſhips 38 39 vol. 2
Sheep where 62 135 194 375 vol. 2, ſkins worn and guts eaten 379 vol. 2

Shell fiſh where and what 20 v. 1, 120 196 381 v. 2
Sherbero river and factory 60 212 vol. 1
Ship the author's ſunk 155 vol. 3
Ship of 50 guns at Braſil 40 vol. 3
Ships and ſhipping where built 248 vol 1, little uſed 122 251 375 400 vol. 1 ſuppreſſed 284 vol. 2 houſes upon them 14 85 vol. 2
Shirts none wore 211 vol. 2
Shoes none wore 3 80 127 211 vol. 2
Shooting of birds where 195 vol. 2
Shooting matches 239 vol. 2
Shot where ſold 43 vol. 1
Shoals and ſhallow places 31 209 253 266 281 297 vol. 1, how diſcovered 214 vol. 1, proper for fiſhing on 429 vol. 1
Shrimps and trade of them 127 v. 1, 196 293 v. 2
Shrubs ſee buſhes, fruit, trees
Siam bay and iſles 73 vol. 2
Sibbil de Wards, Sebald de Waerdts iſles 214 vol. 1
Sick men how refreſhed 226 vol. 1, 190, 368, 390 vol. 2
Sight good, bad, &c. 143 vol. 1 135 vol. 2
Silks a commodity where 271 377 vol. 1, 186 vol. 2
Silk raw 229 vol 2, for ſewing 119 vol. 1, worms where 193 vol. 2, of China 11 82 186 vol. 2 countries poor 207 vol 2, paper 229 vol 2 graſs aprons 110 W.
Sillabar deſcribed 75 343 vol. 2
Silver mines where 393 403 vol. 1
Sylveſter tree, fruit, dye 258 360 363 vol. 1
Sincapore Streights 174 275 vol. 2
Singing ſongs where 261 v. 1, 16 21 129 382 v. 2
Siſal look out 17 vol. 1
Sitting croſs legged where 8 vol. 2
Situation pleaſant 353 vol. 1
Skins how worn 380 381 vol. 2, for inſtrument caſes 75 vol. 1

Skip jack a fiſh 80 vol. 3
Sky clear when 4 45 66 W.
Slaves working where and why 399 402 vol. 1 177 377 vol. 2
Slippers where worn 80 294 vol. 2
Sloth or Sluggard a beaſt 63 vol. 1
Small pox where 13 vol. 2
Smiths what and where 10 228 295 345 vol. 2
Smokes and fires 216 385 vol. 1
Snakes and ſerpents where 65 235 305 346 451 vol. 1, 51 194 221 vol. 2
Snapper fiſh where 15 225 vol. 1
Snook fiſh where 15 74 123 375 vol. 1
Soap a commodity where 276 347 vol. 1
Soldiers what and where 238 vol. 2
Soldier, ſhell fiſh deſcribed 174 vol. 1
Sologues of Mindanao 4 vol. 2
Sounding where 367 vol. 1
Sounds, la, Key in the Samballas 157 159 vol. 1
Sour ſop a fruit 47 vol. 3
South keys or iſlands 34 vol. 1, 36 W.
South ſea, ſhores, breadth, &c. 421 v. 1, 95 v. 2
Souths, ſtorms, where 65 to 68 W.
Soy whence and how made 197 vol. 2
Spain, New, coaſts and places of 122 vol. 1
Spaniſh mackeril where 75 vol. 1
Spears where uſed 239 vol. 2
Spices what and where 377, 448, vol. 1. 27, 43, vol. 2
Spice iſlands 442 vol. 1 68 283 vol 2
Spiders large where 66 vol. 1
Spoons of coco nut 426 vol. 1
Sports at Tonquin 221 vol. 2
Spouts where 122 vol. 2
Spuma what and where 112 vol. 1
Squaſhes beaſts where 61 97 vol. 1
Squirrels where 292 vol. 2

Star apple where 338 vol. 1
State of E. Indian Princes 14 308 vol. 2
States iſland deſcribed 216 vol. 1. 96 vol. 2
Stature of people ſee the countries
Stealing where 304 vol. 2
Steel how hardened 51 59 vol. 1
Sticks burnt on altars 84 vol. 2. chop, what 251 vol. 2
Sting rays, fiſh, where 75 vol. 1
Stocks a puniſhment 245 vol. 2
Stocking where or none 119 272 vol 1. 5 80 127 211 294 vol. 2
Stock fiſh wood where 60 vol. 1
Stomach what good for it 450 vol. 1
Stone friable, &c. 112 273 vol. 1
Storms ſee winds
Strangers how uſed 6 218 vol. 2
Straw hats where 211 vol. 2
Strumſtrum a muſical inſtrument 261 vol. 1
Subtle jacks birds deſcribed 71 vol. 1
Sucking fiſh where 199 vol. 1, 54 W. how uſed 387 vol. 2
Sugar how refined in braſil 38 vol. 3
Sugar canes 8 157 180 212 vol. 1
Sulphur where 265 vol. 1. 233 vol. 2
Sumatra iſland and coaſt 97 142 145 309 vol. 2
Summaſenta river and town 53 102 vol. 1
Sunda ſtreights 28 68 vol. 2
Surinam ſeaſons, &c. 82 104 W.
Suratt merchants where 312 vol. 2. channel 287 vol. 2
Swampy waters unwholeſome 366 vol. 2
Swearing manner of 250 vol. 2
Sweating in hot ſand 410 vol. 1
Swimming in a fright 76 vol. 2
Swines fleſh abhorred 22 vol. 2
Swings at Tonquin 221 vol. 2
Swivels, guns, uſed 75 240 vol. 2

Swords what and where 16 137 vol. 2
Sword fiſh where 28 38 238 243 vol. 1

T.

Tagilla iſland 322 vol. 1
Tabago iſland and town by Panama 321 of the Caribbees 8 vol. 1, 155 vol. 2 56 W.
Tabaſco iſland and river 23 108 vol. 1
Table mount where 373 vol. 2
Tacatalpo de ſierra 112 vol. 1
Tails of cows how uſed 111 W.
Tale what and where 229 297 vol. 2
Tallow where ſold 111 186 vol. 1
Tallow caps what 338 vol. 2
Tamarinds how uſed 368 vol. 3
Tangola iſland 366 vol. 1
Tanning ſee bark, leather
Tarr where and how made 267 357 vol. 1
Tarr tree deſcribed 65 vol. 2
Tarpoon fiſh where 15 74 vol. 1
Tartars garriſon where 89 vol. 2
Taſman's draft rectified 94 vol. 3
Tea what and where 89 vol. 2
Teeth where dyed black 208 vol. 2
Tegoantipeque river 121 vol. 1
Temples of idols 60 84 225 vol. 2
Tenan where 254 vol. 2
Termina laguna 53 vol. 1
Ternate iſland 118 vol. 2
Terra, auſtralis 29 vol. 2
Thieving where 218 vol. 2
Thacker J. ſtory of 38 vol. 2
Tidor iſland 118 vol. 2
Time loſt how 53 vol. 2
Timor iſland 131 vol. 2 109 vol. 3
Timaon, Pulo, 176 vol. 2

Tiger cats where 64 vol. 1
Tire what and where 313 vol. 2
Tiſpo town 126 vol. 1
Tobacco where 12 vol. 2
Tobaſco river and iſland 108 vol. 1
Toddy what and where 425 vol. 1
Tompeque river 127 vol. 1
Tomaco river and town 302 vol. 1
Tondelo river 120 vol. 1
Tonquin bay 179 vol. 2 kingdom 186 to 269 vol. 2 provinces 189 vol. 2
Torrid zone, floods there 203 vol. 2
Tortuga iſland 190 vol. 1
Tornadoes what 212 264 352 359 vol. 1 86 110 122 vol. 2
Treachery at Mindanao 39 vol. 2
Tree large where 121 vol. 2
Trees of New Holland 84 vol. 3
Trieſt iſland deſcribed 51 vol. 1
Triſte is land near Sumatra 143 vol. 2
Tropick birds where 188 vol. 1
Tropicks heat there 201 vol. 2
Toffoons or typhones 205 vol. 2
Turpentine where 230 vol. 2
Tutanig what 336 vol. 2
Turtle where 76 193 234 to 240 vol. 1 67 120 vol. 2 20 56 vol 3
Turtle doves of braſil 51 vol. 3

V.

Variation of the compaſs 66 68 70 vol. 3
Valderas valley 391 vol. 1
Verd. C. iſlands of 203 to 211 vol. 1
Vera cruz, la, town 124 vol. 1
Venezuela, laguna de, 198 vol 1
Verina town 198 vol. 1

Verero pulo 322 vol. 2
Vinella what and where 368 vol. 1
Vulcanos where 252 vol. 1 144 vol. 3

W.

Walleſaw, what and where 143 vol. 1
Wars how carried on 16 240 310 340 vol. 2
Warner Indian where 8 vol. 1
Wax bees where 11 vol. 2
Water dogs of braſil 55 vol. 3
Water ſnake of braſil 55 vol. 3
of New Holland 90 vol. 3
Way, pulo, 228 304 vol. 2
Weeds floating in the ſea, 12 66 80 vol. 3
Weights of Achin 297 vol. 2
Whales, where 40 91 106 vol. 3
Whip rays fiſh deſcribed 75 vol. 1
Whiſtling ducks where 72 vol. 1
Winds uncertain near the line 30 vol. 3
Wild Indians where 175 vol 1.
Women hired out 218 vol. 2
Wooder's eſcape 22 vol. 1
Worms in men's legs 190 vol. 1, in ſhips bottoms 40 vol. 2
Worm ſeed where 232 vol. 2
Worſhip Mahomatan 225 vol. 2 55 W.
Wounds of amputation 304 vol. 2
Wrecks what and where 93 vol. 1, 184 267 281 vol 2.
Writing manner of 227 vol. 2

Y.

Yams roots where 144 157 180 209 274 285 442 vol. 1
Yards of ſhip where timber for 68 335 vol. 2

Year's, new, feaſts 221 vol. 2, ſeaſons where 200 vol 2
Ylo river 228 vol. 1
Yucatan ſee Jucatan
Yunam, province of China 232 vol. 2

Z.

Zeliſco (Xeliſco) hill 401 vol. 1
Zone torrid, ſeaſons 200 vol. 2

D 769
D166r
V.3